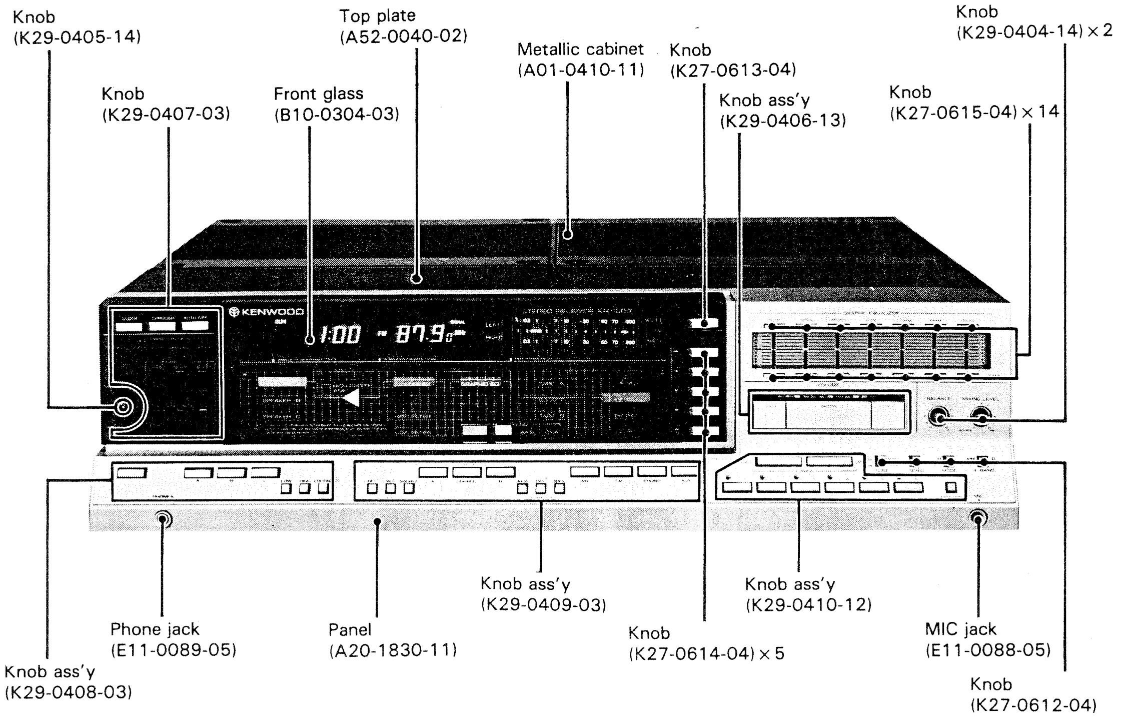
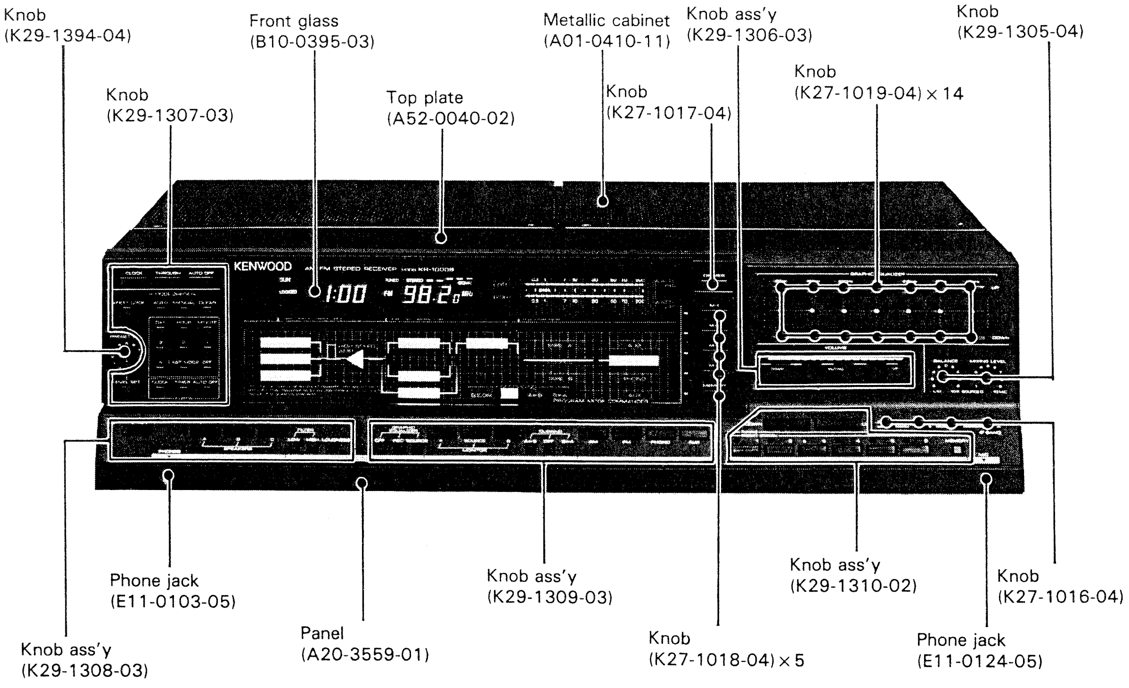
KENWOOD

KR-1000
KR-1000B

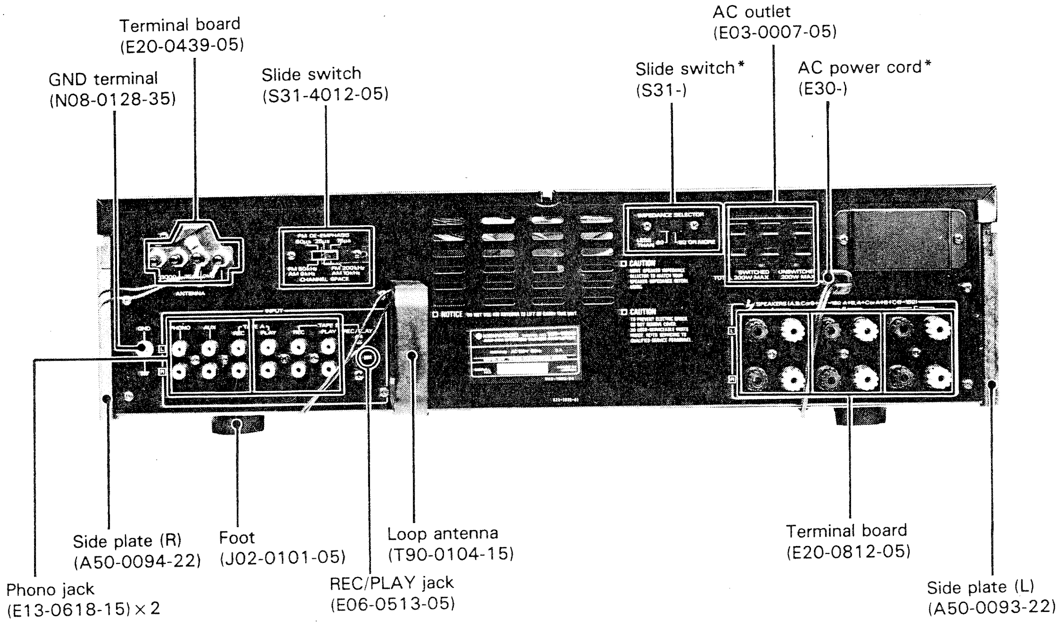
AM-FM STEREO RECEIVER

SERVICE MANUAL


Knob
(K29-0405-14)
Top plate
(A52-0040-02)
Metallic cabinet
(A01-0410-11)
Knob
(K27-0613-04)
Knob
(K29-0404-14) × 2
Knob
(K29-0407-03)
Front glass
(B10-0304-03)
Knob ass'y
(K29-0406-13)
Knob
(K27-0615-04) × 14
Knob ass'y
(K29-0409-03)
Knob ass'y
(K29-0410-12)
Phone jack
(E11-0089-05)
Panel
(A20-1830-11)
Knob
(K27-0614-04) × 5
MIC jack
(E11-0088-05)
Knob ass'y
(K29-0408-03)
Knob
(K27-0612-04)


Knob
(K29-1394-04)
Front glass
(B10-0395-03)
Metallic cabinet
(A01-0410-11)
Knob ass'y
(K29-1306-03)
Knob
(K29-1305-04)
Knob
(K27-1019-04) × 14
Knob
(K29-1307-03)
Top plate
(A52-0040-02)
Knob
(K27-1017-04)
Phone jack
(E11-0103-05)
Knob ass'y
(K29-1309-03)
Knob ass'y
(K29-1310-02)
Knob
(K27-1016-04)
Panel
(A20-3559-01)
Knob ass'y
(K29-1308-03)
Knob
(K27-1018-04) × 5
Phone jack
(E11-0124-05)

EXTERNAL VIEW/DIAL CORD STRINGING


Terminal board
(E20-0439-05)
GND terminal
(N08-0128-35)
Slide switch
(S31-4012-05)
AC outlet
(E03-0007-05)
Slide switch*
(S31-)
AC power cord*
(E30-)
Side plate (R)
(A50-0094-22)
Foot
(J02-0101-05)
Loop antenna
(T90-0104-15)
Terminal board
(E20-0812-05)
Phono jack
(E13-0618-15)×2
REC/PLAY jack
(E06-0513-05)
Side plate (L)
(A50-0093-22)

*Refer to parts list on page 40.

DIAL CORD STRINGING

1. Attach the dial cord to the dial spring and proceed from ① to ③.
2. Wind the dial string twice around the motor pulley ④ and proceed from ⑤ to ⑦.
3. Turn the pulley fully clockwise and slide the belt so that the boundary between black and white moves to the tip of the arrow. (⑧) Fix the hardware to the dial cord with an adhesive. (⑨)

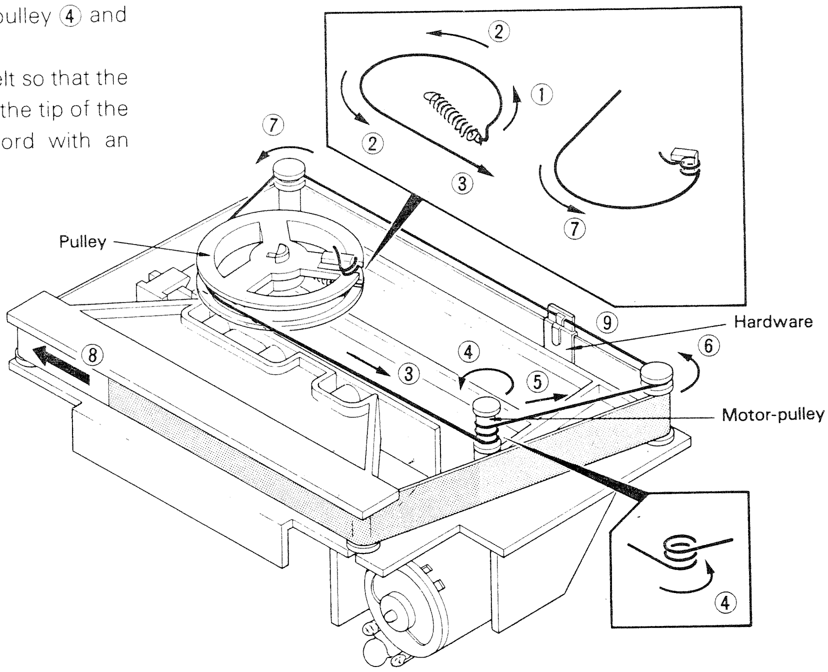
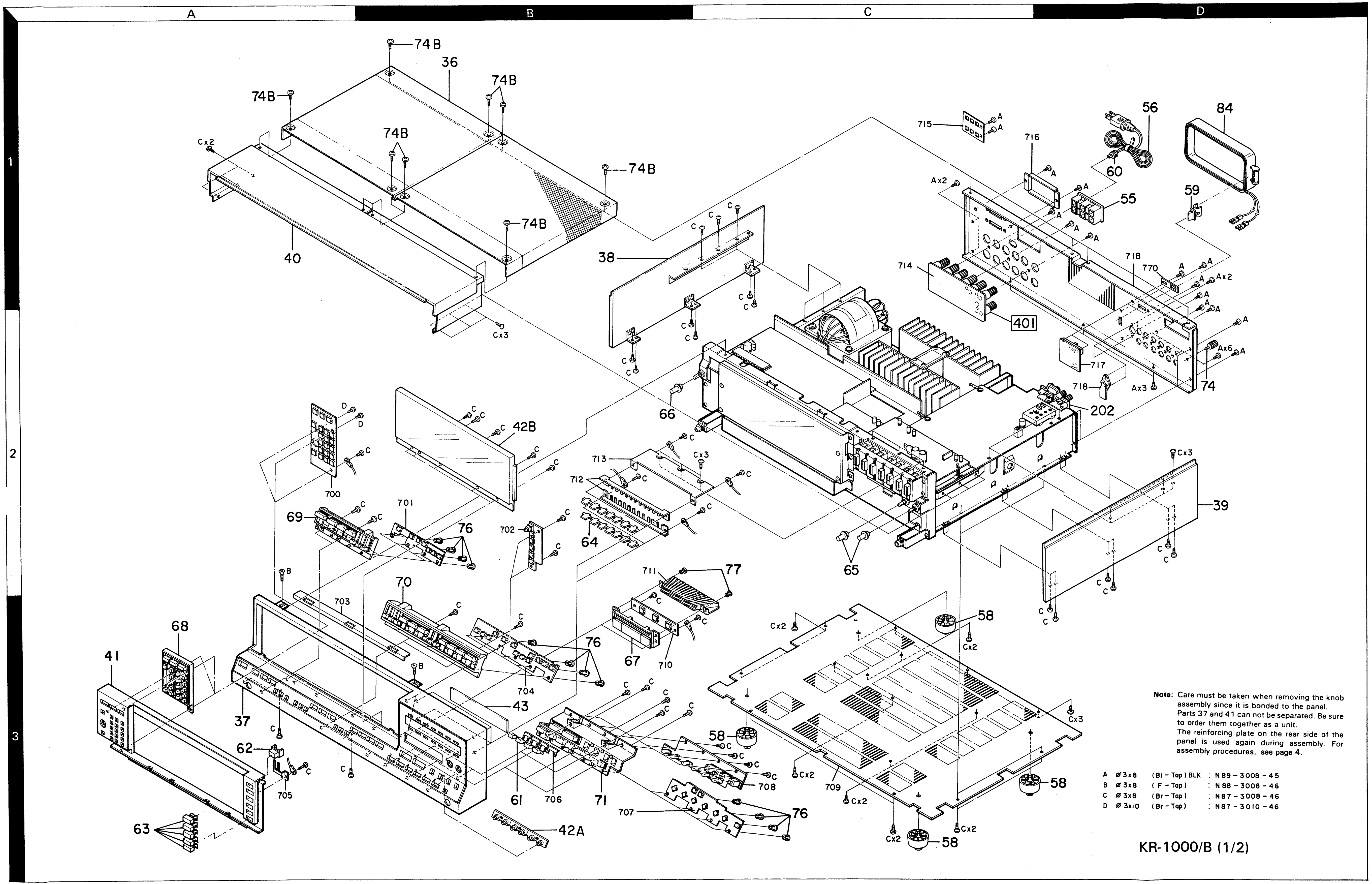

②
①
②
③
⑦
⑦
Pulley
⑨
Hardware
⑥
⑧
④
③
⑤
Motor-pulley
④

Fig. 1 Dial Cord Stringing

EXPLODED VIEW

Parts of small exploded view Nos. are not supplied


A
B
C
D
1
2
3
74B
36
74B
74B
Cx2
74B
74B
74B
40
Cx3
38
C
715
A
716
Ax2
56
60
84
55
59
714
401
718
770
Ax2
Ax6
74
717
718
Ax3
202
66
42B
D
700
713
712
Cx3
64
69
701
76
702
39
Cx3
65
B
711
77
70
703
68
41
37
62
705
63
704
43
76
67
710
61
706
71
42A
707
708
76
58
709
Cx2
58
58
58

Note: Care must be taken when removing the knob assembly since it is bonded to the panel.
Parts 37 and 41 can not be separated. Be sure to order them together as a unit.
The reinforcing plate on the rear side of the panel is used again during assembly. For assembly procedures, **see page 4.**

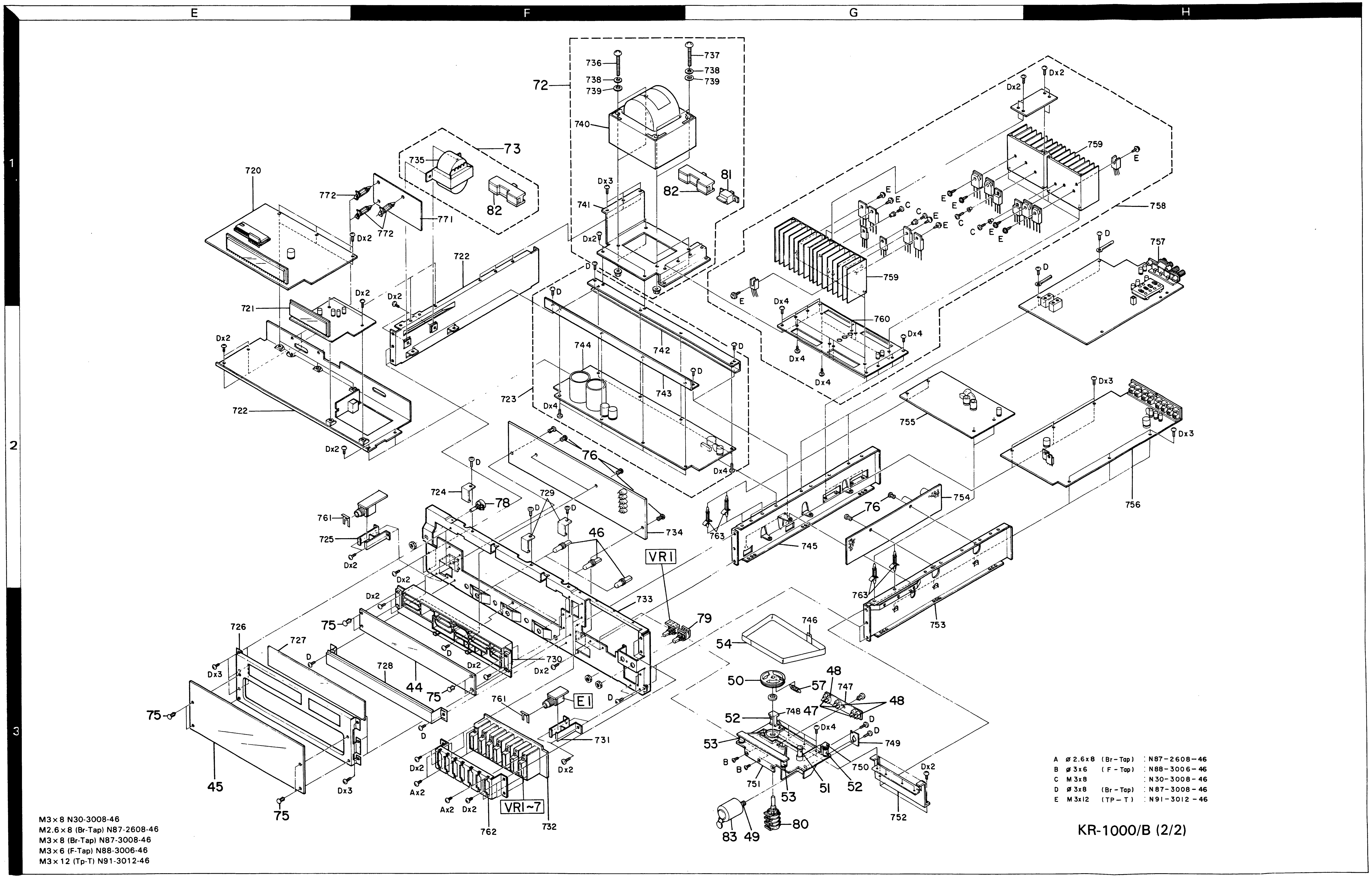
A ø3x8 (Bl-Tap) BLK : N89-3008-45
B ø3x8 (F-Tap) : N88-3008-46
C ø3x8 (Br-Tap) : N87-3008-46
D ø3x10 (Br-Tap) : N87-3010-46

KR-1000/B (1/2)

Refer to parts list on page 40.

EXPLODED VIEW

Parts of small exploded view Nos. are not supplied


E
F
G
H
1
2
3
72
736
737
738
739
740
73
735
720
772
771
82
81
Dx3
741
Dx2
D
722
721
744
742
743
723
Dx4
758
759
E
C
760
Dx4
757
755
756
Dx3
76
724
78
729
761
725
46
734
VR1
745
763
754
753
733
79
726
727
75
728
44
730
Dx2
E1
731
762
732
VR1~7
Ax2
Dx3
45
54
746
50
57
48
747
52
748
47
53
749
B
750
751
51
83
49
80
752

A	ø 2.6x8	(Br-Tap)	: N87-2608-46
B	ø 3x6	(F - Tap)	: N88-3006-46
C	M 3x8		: N30-3008-46
D	ø 3x8	(Br-Tap)	: N87-3008-46
E	M 3x12	(TP-T)	: N91-3012-46

KR-1000/B (2/2)

M3×8 N30-3008-46
M2.6×8 (Br-Tap) N87-2608-46
M3×8 (Br-Tap) N87-3008-46
M3×6 (F-Tap) N88-3006-46
M3×12 (Tp-T) N91-3012-46

Refer to parts list on page 40.

PANEL ASSEMBLY/DISASSEMBLY FOR REPAIR

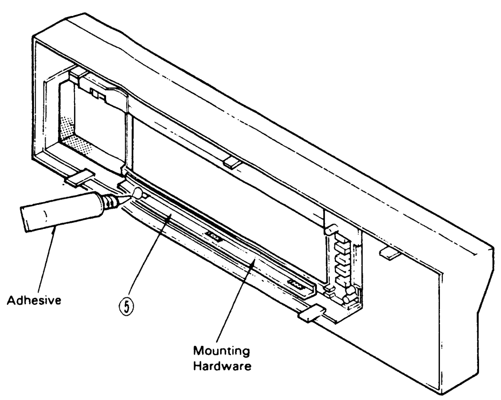
(1) Affix double-sided adhesive tape to the left side of the panel escutcheon. (①)

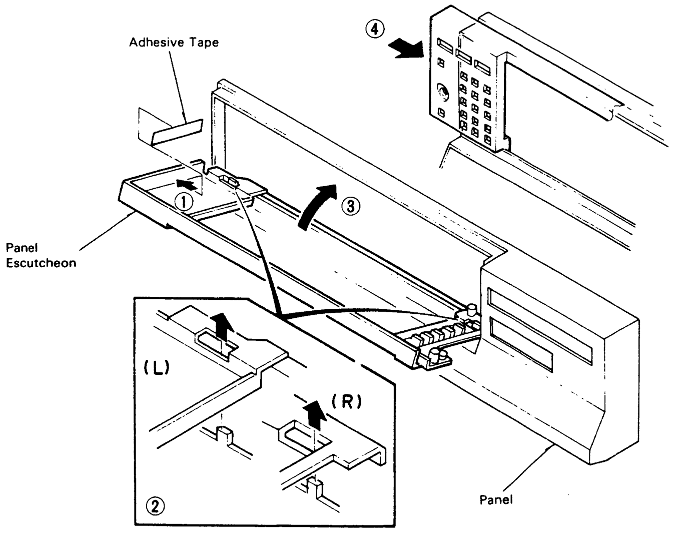
(2) Hook the claws on the panel into the holes on the bottom side of the panel escutcheon. (②)

(3) Stand the panel escutcheon so that the gap between the top side of the panel and panel escutcheon is uniform. (③)

(4) Keeping the gap even, shift the panel escutcheon in the direction indicated by arrow ④ so that the panel and panel escutcheon are bonded by the tape.

(5) Affix double-sided adhesive tape to the mounting hardware and apply the mounting hardware to the panel and panel escutcheon. Apply adhesive to the dotted parts. (⑤)


Adhesive
⑤
Mounting Hardware


Adhesive Tape
④
Panel Escutcheon
①
③
(L)
(R)
②
Panel

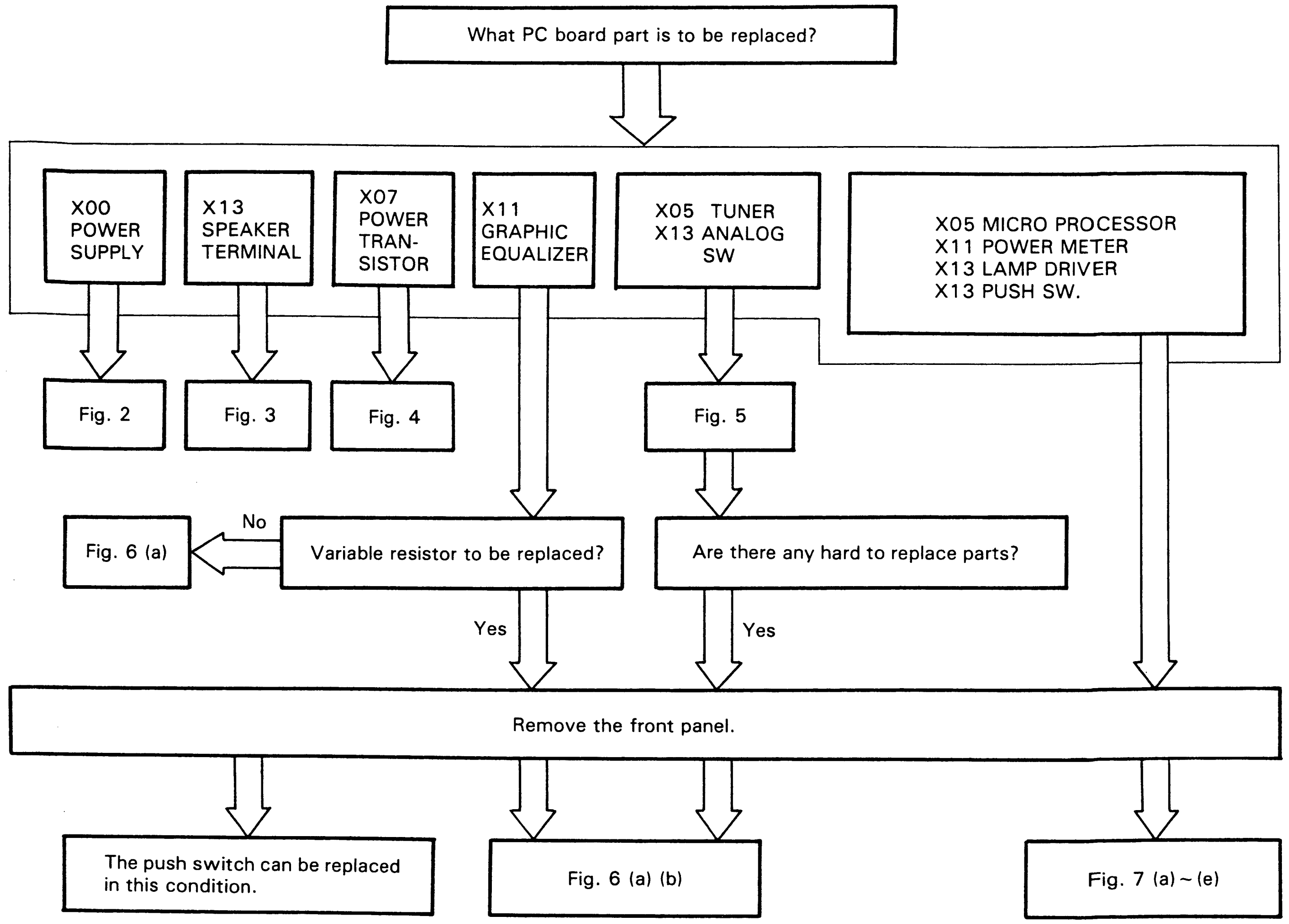
DISASSEMBLY FOR REPAIR

- For disassembly for repair, follow the disassembly instructions in the figure for the location to be replaced as indicated in the figure on the next page.

Note:

1. When connectors and leads are disconnected from PC boards for disassembly, be extremely careful to ensure that they are reconnected in their original positions.
2. During reassembly, be extremely careful to ensure that the leads are reconnected in the same shape they were in prior to disassembly; failure to do so may result in performance degradation or inability to complete reassembly.
3. When replacing the panel, refer to the panel assembly procedure on this page for assembly since the front panel and panel escutcheon are delivered separately as repair parts.

DISASSEMBLY FOR REPAIR


What PC board part is to be replaced?
X00 POWER SUPPLY
X13 SPEAKER TERMINAL
X07 POWER TRAN-SISTOR
X11 GRAPHIC EQUALIZER
X05 TUNER X13 ANALOG SW
X05 MICRO PROCESSOR
X11 POWER METER
X13 LAMP DRIVER
X13 PUSH SW.
Fig. 2
Fig. 3
Fig. 4
Fig. 5
Fig. 6 (a)
No
Variable resistor to be replaced?
Are there any hard to replace parts?
Yes
Yes
Remove the front panel.
The push switch can be replaced in this condition.
Fig. 6 (a) (b)
Fig. 7 (a) ~ (e)

1. Removing the Power Supply PC Board (X00)

(1) Remove the bottom plate.

(2) Loosen 8 screws holding the PC board, disconnect wires which restrict movement of the PC board and pull it out.

(3) Turn the PC board as shown by the arrow in the figure at the right. Now parts can be replaced.

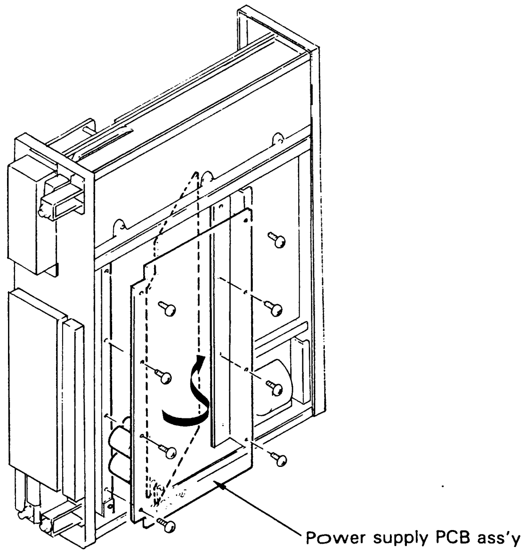

Power supply PCB ass'y

Fig. 2

DISASSEMBLY FOR REPAIR

2. Removing the Speaker Terminal Board

(1) Remove the 6 screws holding the rear panel. The rear panel is not removed at this point because it is connected to the antenna terminal and phono jack boards.

(2) Remove the 3 screws fixing the speaker terminal to the rear panel.

(3) Pull the rear panel slightly in the direction indicated by arrow ① and pull out the SP terminal in the direction indicated by arrow ②.

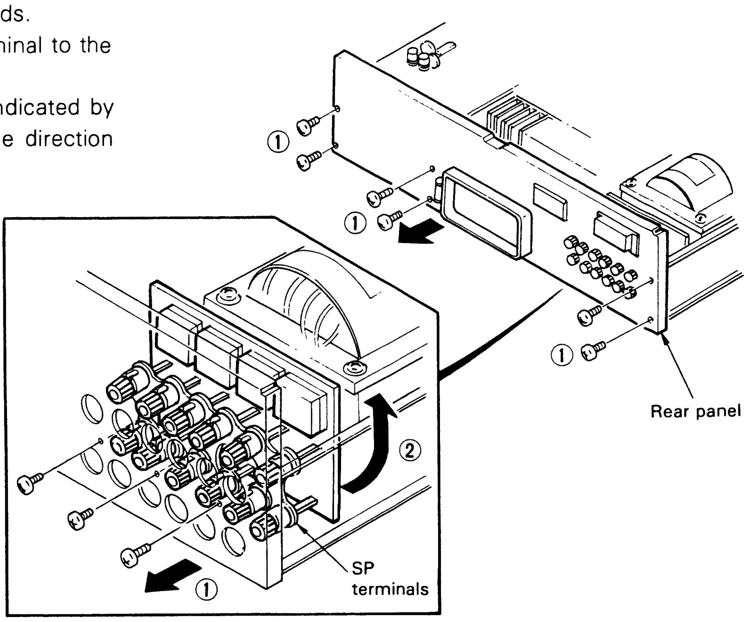


Fig. 3

3. Power Transistor Replacement

(1) Remove the PC board which holds the heat sink from above. (①)

(2) When one of the transistors on a heat sink without a varister is defective, unsolder the terminals of all transistors mounted on that heat sink. Then remove the screws holding the heat sink to the PC board from the bottom side, remove the heat sink and transistors together and replace the transistors.

(3) When one of the transistors on the heat sink with a varister is defective, remove the PC board together with the four heat sink mounted on it and loosen the screw holding the varister to the heat sink. Then replace the transistor as described at right.

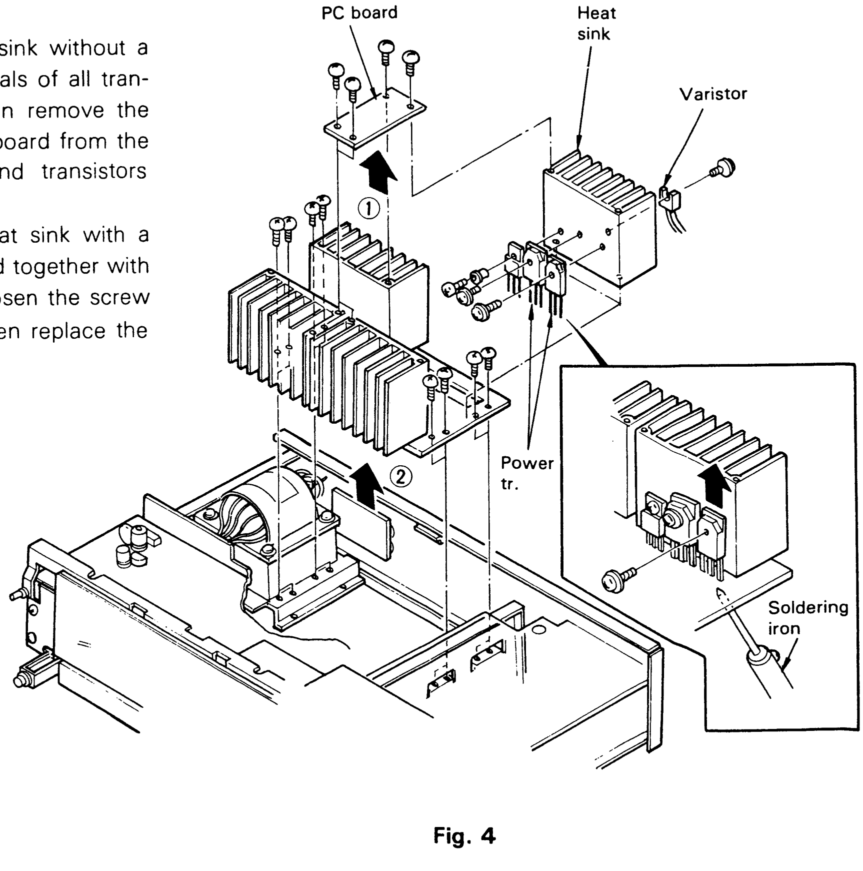


Fig. 4

DISASSEMBLY FOR REPAIR

4. Removing the Tuner Unit (X05)

(1) Loosen the 5 screws holding the side plate. (①)

(2) Loosen the 4 screws holding the tuner unit and remove it in the direction indicated by arrow ②.

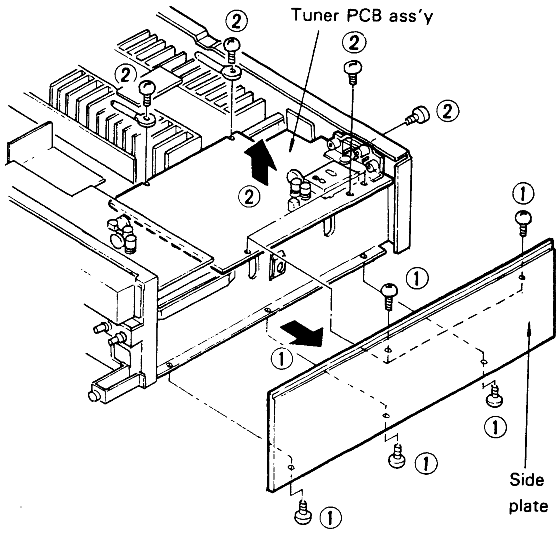

Tuner PCB ass'y
②
②
②
②
②
①
①
①
①
①
Side plate

Fig. 5

5. Removing the Graphic Equalizer PC Boards

(1) Remove the PC boards from the 4 PC board holders. (①)

(2) Loosen the 4 screws holding the PC board on which a variable resistor is mounted and remove it from the sub-panel. (②)

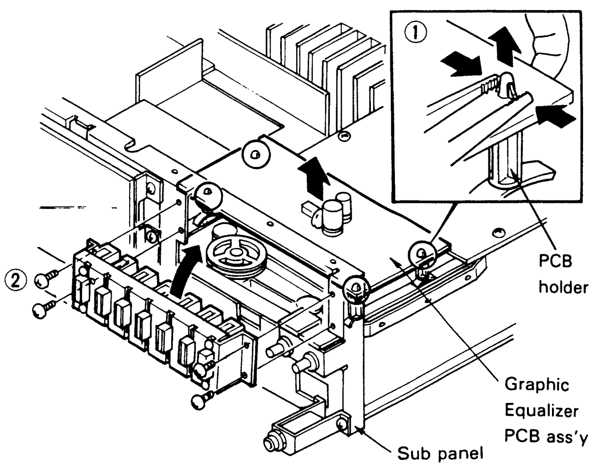

①
②
PCB holder
Graphic Equalizer PCB ass'y
Sub panel

Fig. 6 (a)

6. Removing the Volume Reflector

(1) Remove the 2 screws holding the volume reflector to the sub panel.

(2) Remove the 2 screws holding the volume refector to the frame.

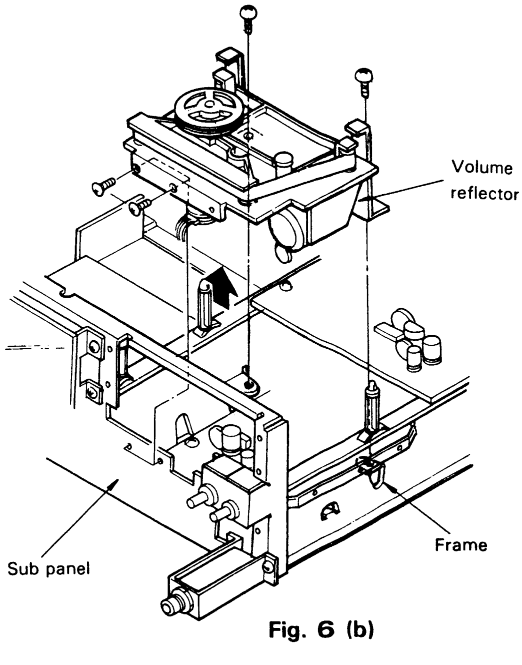

Volume reflector
Frame
Sub panel

Fig. 6 (b)

DISASSEMBLY FOR REPAIR

7. Removing the Microprocessor PC Board and Power Meter PC Board

(1) Remove the front panel.
(2) Remove the 6 screws holding the scale plate.
(3) Remove the 3 screws holding the fixtures for the fluorescent display tubes. (①, ②)
(4) Remove the screws holding the PC boards to the frame. (There is one PC board holder on the X05 PC board.)
(5) Tilt the PC boards in the direction indicated by the arrows ④ ⑤ and pull them out, being careful not to damage the fluorescent display tubes.

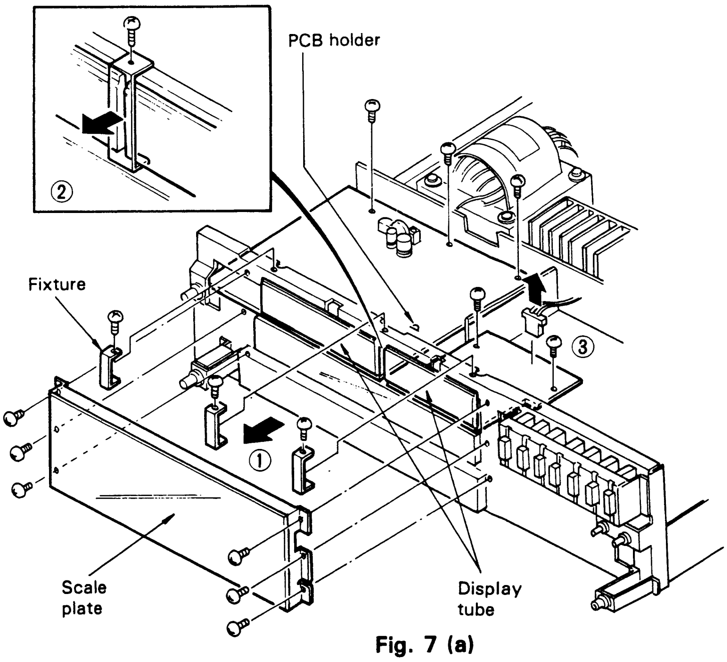

②
PCB holder
Fixture
③
①
Scale plate
Display tube

Fig. 7 (a)

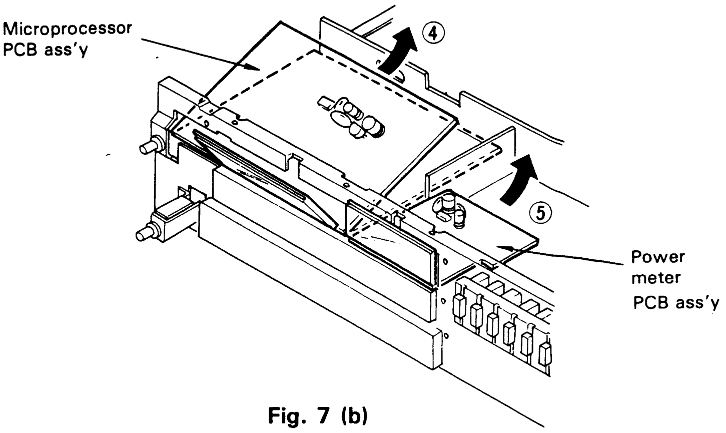

Microprocessor PCB ass'y
④
⑤
Power meter PCB ass'y

Fig. 7 (b)

8. Lamp Replacement

(1) Remove the push rivets holding the dial plate. Use a standard screwdriver or other tool with a sharp tip to pop out the push rivets.
(2) Use long nose pliers to grasp the rubber portion of the lamp and pull it out.

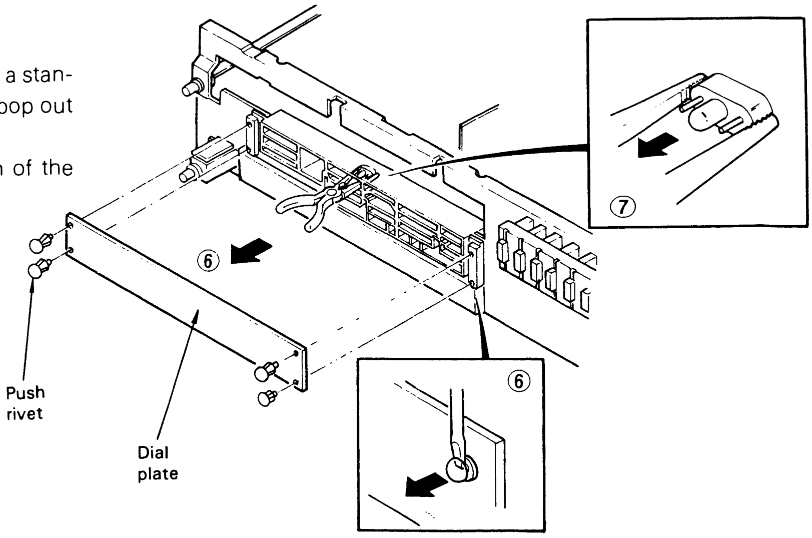

⑦
⑥
Push rivet
Dial plate
⑥

Fig. 7 (c)

DISASSEMBLY FOR REPAIR

9. Removing the Lamp Driver PC Board

(1) Remove the graphic equalizer PC board. (⑧)

(2) Remove the PC boards on which fluorescent display tubes are mounted. (⑨, ⑩)

(3) Remove the 4 screws holding the frame on which the fluorescent display tubes were fastened and slide it to the rear. (⑪)

(4) Remove the 4 push rivets holding the lamp driver PC board. (⑫) Then remove the 4 screws holding the reflector and remove it.

(5) Pull the lamp driver PC board out from the top. (⑬)

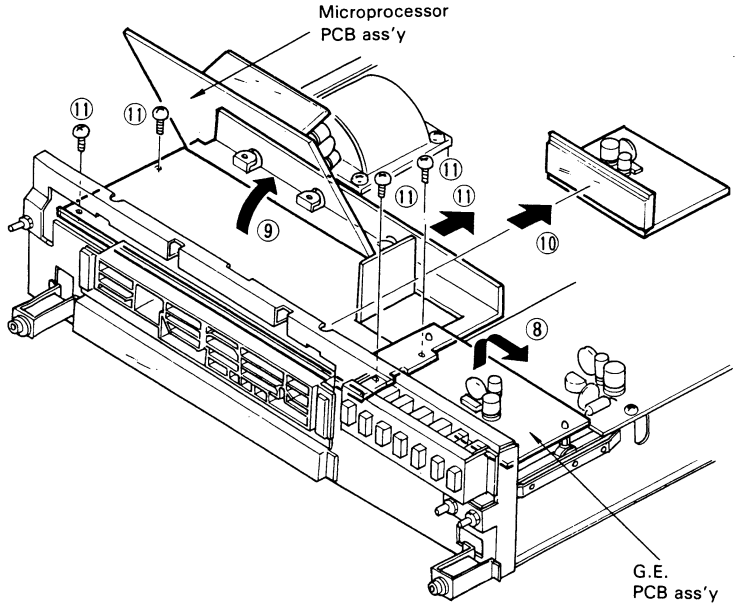

Microprocessor
PCB ass'y
⑪
⑪
⑪
⑪
⑪
⑨
⑩
⑧
G.E.
PCB ass'y

Fig. 7 (d)

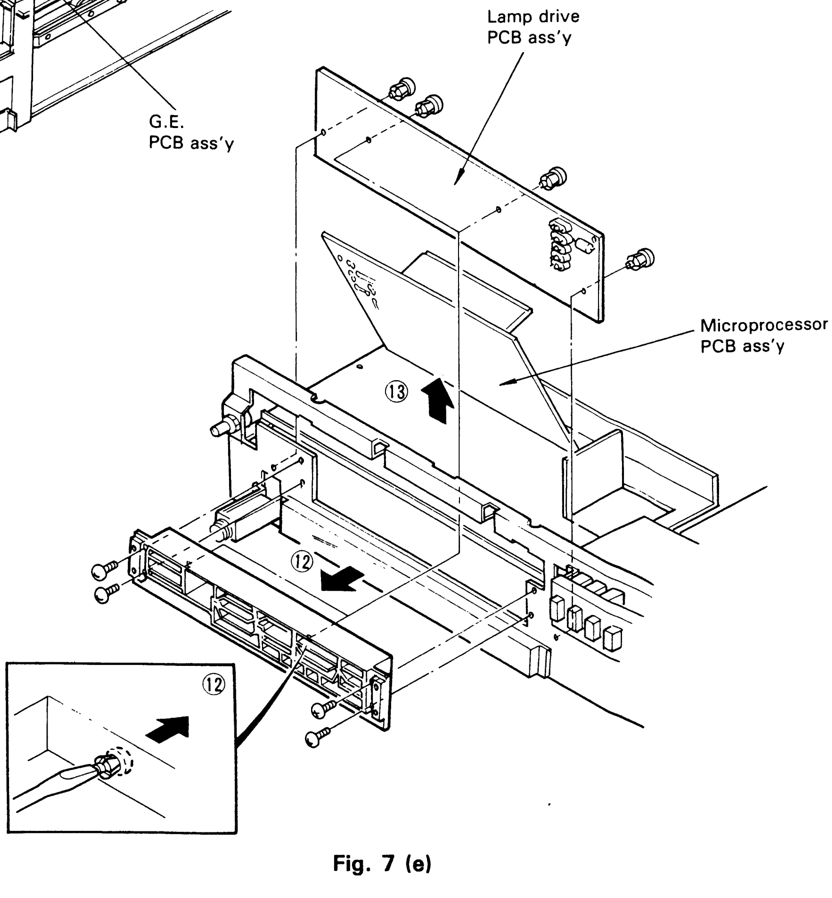
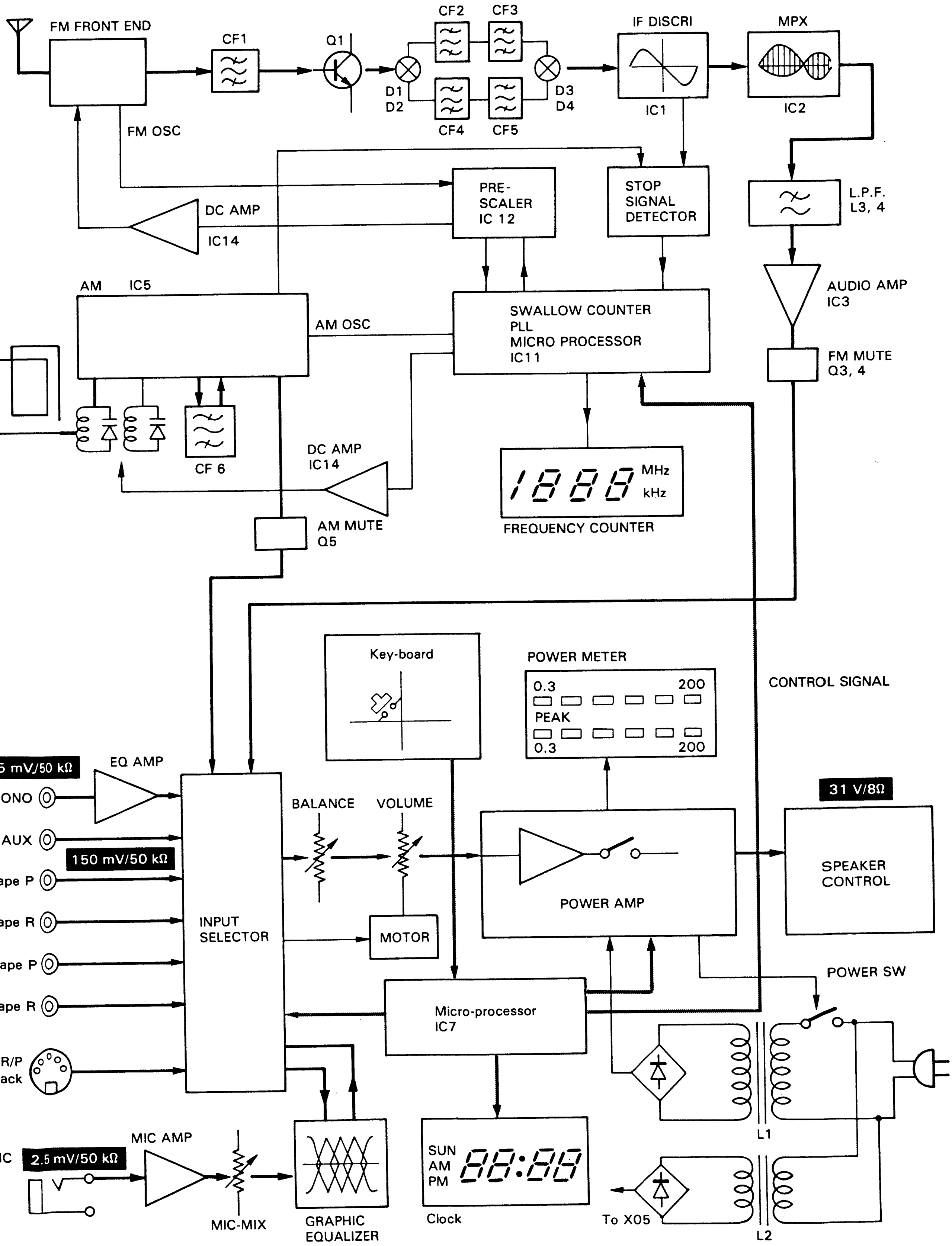

Lamp drive
PCB ass'y
Microprocessor
PCB ass'y
⑬
⑫
⑫

Fig. 7 (e)

BLOCK & LEVEL DIAGRAM


FM FRONT END
CF1
Q1
CF2
CF3
D1
D2
CF4
CF5
D3
D4
IF DISCRI
IC1
MPX
IC2
FM OSC
DC AMP
IC14
PRE-
SCALER
IC 12
STOP
SIGNAL
DETECTOR
L.P.F.
L3, 4
AUDIO AMP
IC3
FM MUTE
Q3, 4
AM IC5
AM OSC
SWALLOW COUNTER
PLL
MICRO PROCESSOR
IC11
CF 6
DC AMP
IC14
1888
MHz
kHz
FREQUENCY COUNTER
AM MUTE
Q5
Key-board
POWER METER
0.3
200
PEAK
0.3
200
CONTROL SIGNAL
2.5 mV/50 kΩ
EQ AMP
PHONO
AUX
150 mV/50 kΩ
A Tape P
A Tape R
B Tape P
B Tape R
R/P
Jack
INPUT
SELECTOR
BALANCE
VOLUME
MOTOR
POWER AMP
31 V/8Ω
SPEAKER
CONTROL
POWER SW
Micro-processor
IC7
L1
MIC
2.5 mV/50 kΩ
MIC AMP
MIC-MIX
GRAPHIC
EQUALIZER
SUN
AM
PM
88:88
Clock
To X05
L2

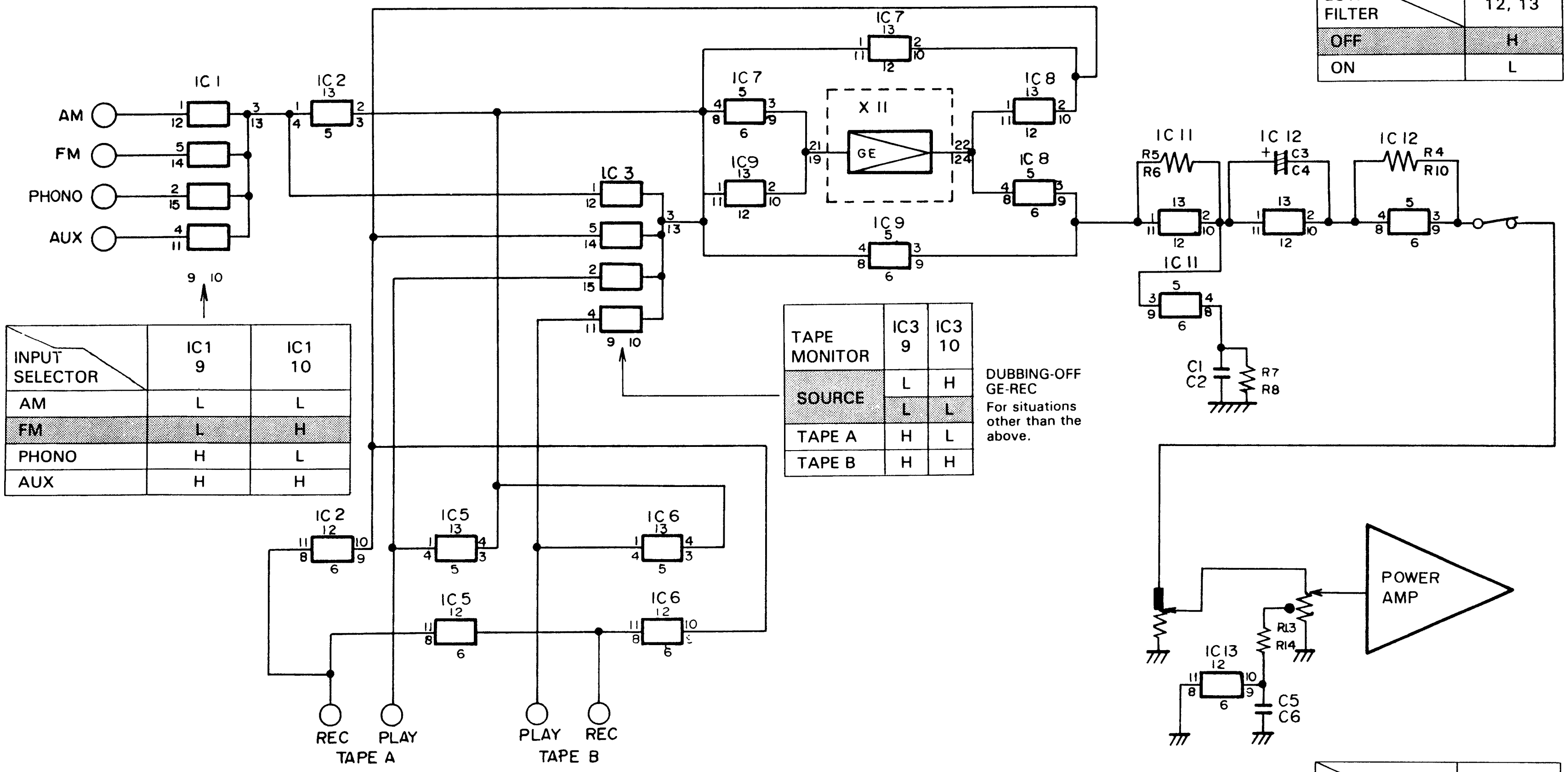
CIRCUIT DESCRIPTION

GRAPHIC EQUALIZER	IC8 5, 6 IC9 12, 13	IC7 5, 6 IC8 12, 13	IC9 5, 6	IC7 12, 13
OFF	L	L	H	H
REC	L	H	H	L
▨ SOURCE	H	L	L	H

HIGH FILTER	IC11 12, 13	IC11 5, 6
▨ OFF	H	L
ON	L	H

MUTING	IC12 5, 6
▨ OFF	H
ON	L

LOW FILTER	IC12 12, 13
▨ OFF	H
ON	L



AM
FM
PHONO
AUX
IC 1
IC 2
IC 3
IC 7
IC 8
IC 9
X 11
GE
IC 11
IC 12
R5
R6
R4
R10
C3
C4
C1
C2
R7
R8
IC 5
IC 6
IC 13
R13
R14
C5
C6
POWER AMP
9 10
REC
PLAY
TAPE A
PLAY
REC
TAPE B

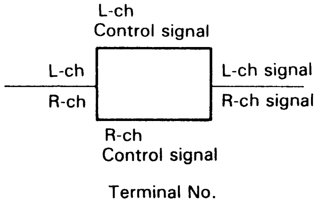
INPUT SELECTOR	IC1 9	IC1 10
AM	L	L
▨ FM	L	H
PHONO	H	L
AUX	H	H

TAPE MONITOR	IC3 9	IC3 10	
SOURCE	L	H	DUBBING-OFF GE-REC
▨	L	L	For situations other than the above.
TAPE A	H	L	
TAPE B	H	H	

▨ Initialized condition

LOUNDNESS	IC13 6, 12
OFF	H
▨ ON	L

DUBBING	IC5 6, 12 IC2 5, 13	IC2 6, 12 IC6 5, 13	IC5 5, 13	IC6 6, 12
▨ OFF	H	L	L	H
A→B	L	L	H	H
B→A	L	H	L	L



L-ch Control signal
L-ch
R-ch
L-ch signal
R-ch signal
R-ch Control signal
Terminal No.

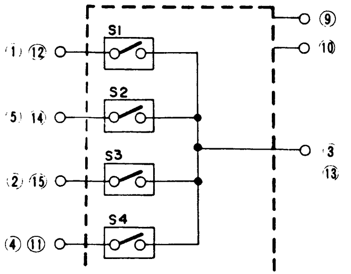
Fig. 9 Simplified Analog Switch Circuit

CIRCUIT DESCRIPTION

1. Analog Switch (X13-3160-10)

Fig. 9 shows a simplified analog switch circuit. The KR-1000 uses an analog switch IC (4066 and 4052) to select input sources. Each analog switch is ON when a high level signal is applied to the corresponding control terminal (4066: pin 5, 6, 12 or 13, 4052: pin 9 or/and 10); otherwise it is OFF.

The operation of IC 1 and 3 is shown in Fig. 10. IC 1 and IC 3 generate the decoded control signals and its signal controls 4 analog switches.



CONTROL		ON SW
⑨	⑩	
L	L	S_1
L	H	S_2
H	L	S_3
H	H	S_4

Fig. 10 IC1, 3 Operation

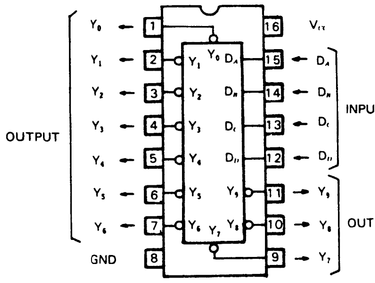
2. Microprocessor (X05)

The KR-1000 uses a microprocessor (μPD553C-127) to control built-in clock, timer and key input operation.

The function of each pin of the microprocessor is shown in Fig. 13～15. Pin 7 is the initialization terminal to which a high level signal is momentarily applied to initialize all output terminal states when the AC plug is inserted in an AC outlet; the level of pin 7 is normally low. PC0～PC3, PD0～PD3, PH0～PH2 and PI0～PI2 output the analog switch control signals. The output signals of PG0～PG3 are decoded into 10 signals with IC6 (74LS42). These are used as the digit signals for the built-in clock, the preset station selecting signals and the clock signal for the latch IC (which latches the SPEAKER selecting signals and the LOW-FILTER ON/OFF signal). The function of IC6 is shown in Fig. 11. The output signals of PE0～PE3 are latched by IC9 (4042) as the SPEAKER selecting signals and the LOW-FILTER ON/OFF signal.

The function of IC9 is shown in Fig. 12. One of the output signals from PE0～PE3 and PB0～PB3 is input to one of terminals PA0～PA3 and PB0～PB3 when a key is pressed. This allows the microprocessor to recognize which key is pressed. The output signals of terminals PE0～PE3 and PF0～PF3 are also used to drive the segments of the fluorescent display tube for the built-in clock. Therefore, the clock display goes off temporarily when a key is pressed.

IC9 (4042) contains a quadraple D latch which has independent data input terminals and a common clock input terminal. When the level applied to the Polarity terminal is "L": the input data is output as is when the clock signal level is "L"; the input data is latched when the clock signal rises. When the level applied to the Polarity terminal is "H", the input data is output as is when the clock signal level is "H"; the input data is latched when the clock signal drops.

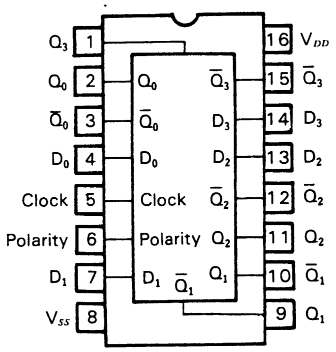


D_D	D_C	D_B	D_A	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9
L	L	L	L	L	H	H	H	H	H	H	H	H	H
L	L	L	H	H	L	H	H	H	H	H	H	H	H
L	L	H	L	H	H	L	H	H	H	H	H	H	H
L	L	H	H	H	H	H	L	H	H	H	H	H	H
L	H	L	L	H	H	H	H	L	H	H	H	H	H
L	H	L	H	H	H	H	H	H	L	H	H	H	H
L	H	H	L	H	H	H	H	H	H	L	H	H	H
L	H	H	H	H	H	H	H	H	H	H	L	H	H
H	L	L	L	H	H	H	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	H	H	H	H	L
H	L	H	L	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
H	H	L	L	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	H	L	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

Fig. 11

CIRCUIT DESCRIPTION

Pin connection


Q_3 1
Q_0 2
$\bar{Q}_0$ 3
D_0 4
Clock 5
Polarity 6
D_1 7
V_{SS} 8
16 V_{DD}
15 $\bar{Q}_3$
14 D_3
13 D_2
12 $\bar{Q}_2$
11 Q_2
10 $\bar{Q}_1$
9 Q_1
Q_0
$\bar{Q}_3$
$\bar{Q}_0$
D_3
D_0
D_2
Clock
$\bar{Q}_2$
Polarity
Q_2
D_1
$\bar{Q}_1$
Q_1

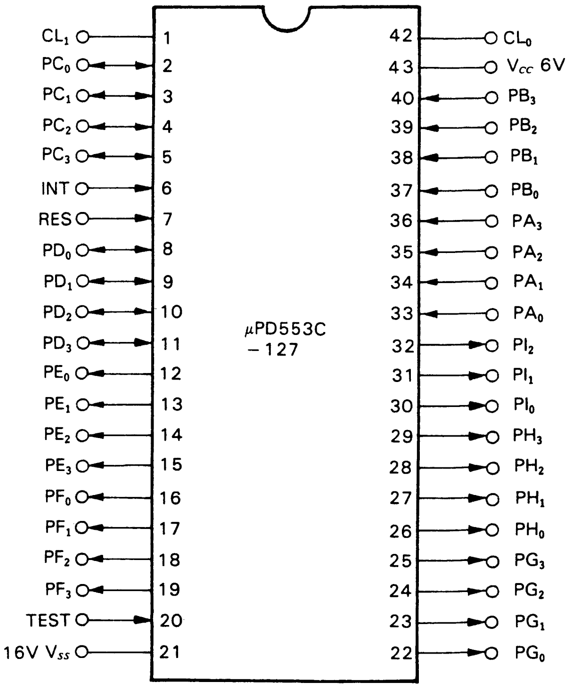
(TOP VIEW)

Function

Clock	Polarity	Q
L	L	Data
_|‾	L	Latch
H	H	Data
‾|_	H	Latch

Fig. 12

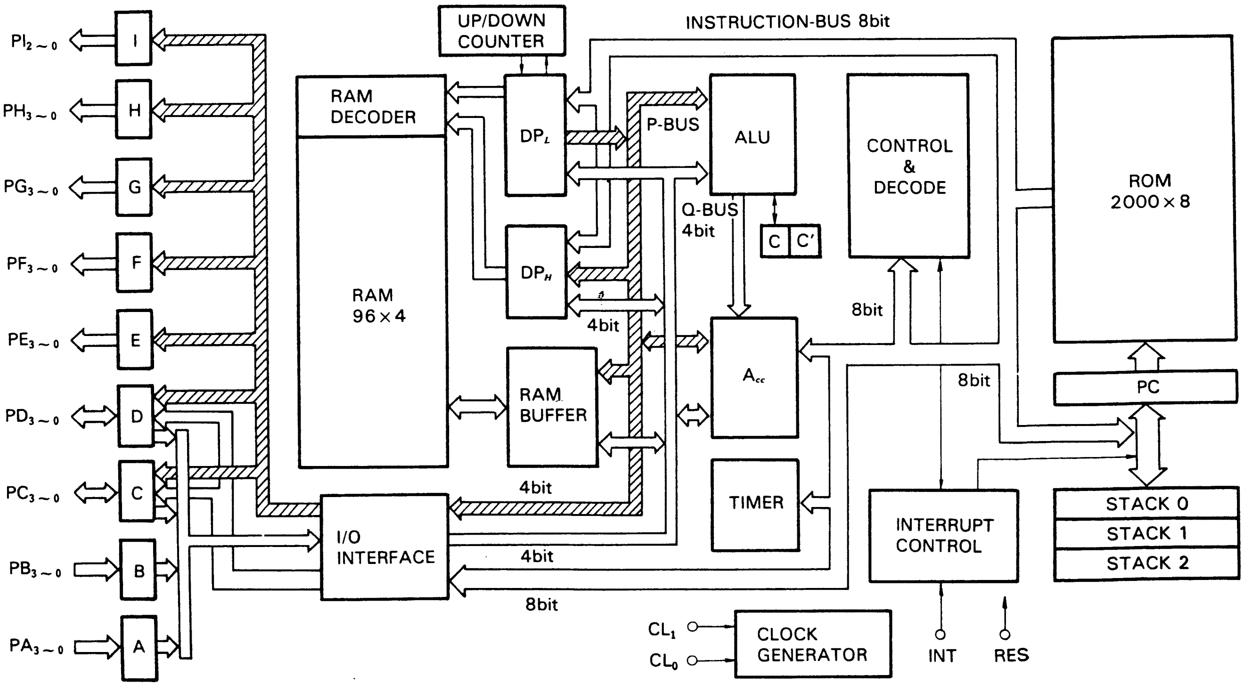
Pin connections


CL_1 1
PC_0 2
PC_1 3
PC_2 4
PC_3 5
INT 6
RES 7
PD_0 8
PD_1 9
PD_2 10
PD_3 11
PE_0 12
PE_1 13
PE_2 14
PE_3 15
PF_0 16
PF_1 17
PF_2 18
PF_3 19
TEST 20
16V V_{SS} 21
42 CL_0
43 V_{CC} 6V
40 PB_3
39 PB_2
38 PB_1
37 PB_0
36 PA_3
35 PA_2
34 PA_1
33 PA_0
32 PI_2
31 PI_1
30 PI_0
29 PH_3
28 PH_2
27 PH_1
26 PH_0
25 PG_3
24 PG_2
23 PG_1
22 PG_0
μPD553C
−127

Terminal name

$CL_{0,1}$: External LC connections for clock signal generator
INT : Interrupt
RES : Reset
$PA_{3\sim0}$: Input port $A_{3\sim0}$
$PB_{3\sim0}$: Input port $B_{3\sim0}$
$PC_{3\sim0}$: Input/Output port $C_{3\sim0}$
TEST : Test terminal
$PD_{3\sim0}$: Input/Output port $D_{3\sim0}$
$PE_{3\sim0}$: Output port $E_{3\sim0}$
$PF_{3\sim0}$: Output port $F_{3\sim0}$
$PG_{3\sim0}$: Output port $G_{3\sim0}$
$PH_{3\sim0}$: Output port $H_{3\sim0}$
$PI_{2\sim0}$: Output port $I_{2\sim0}$

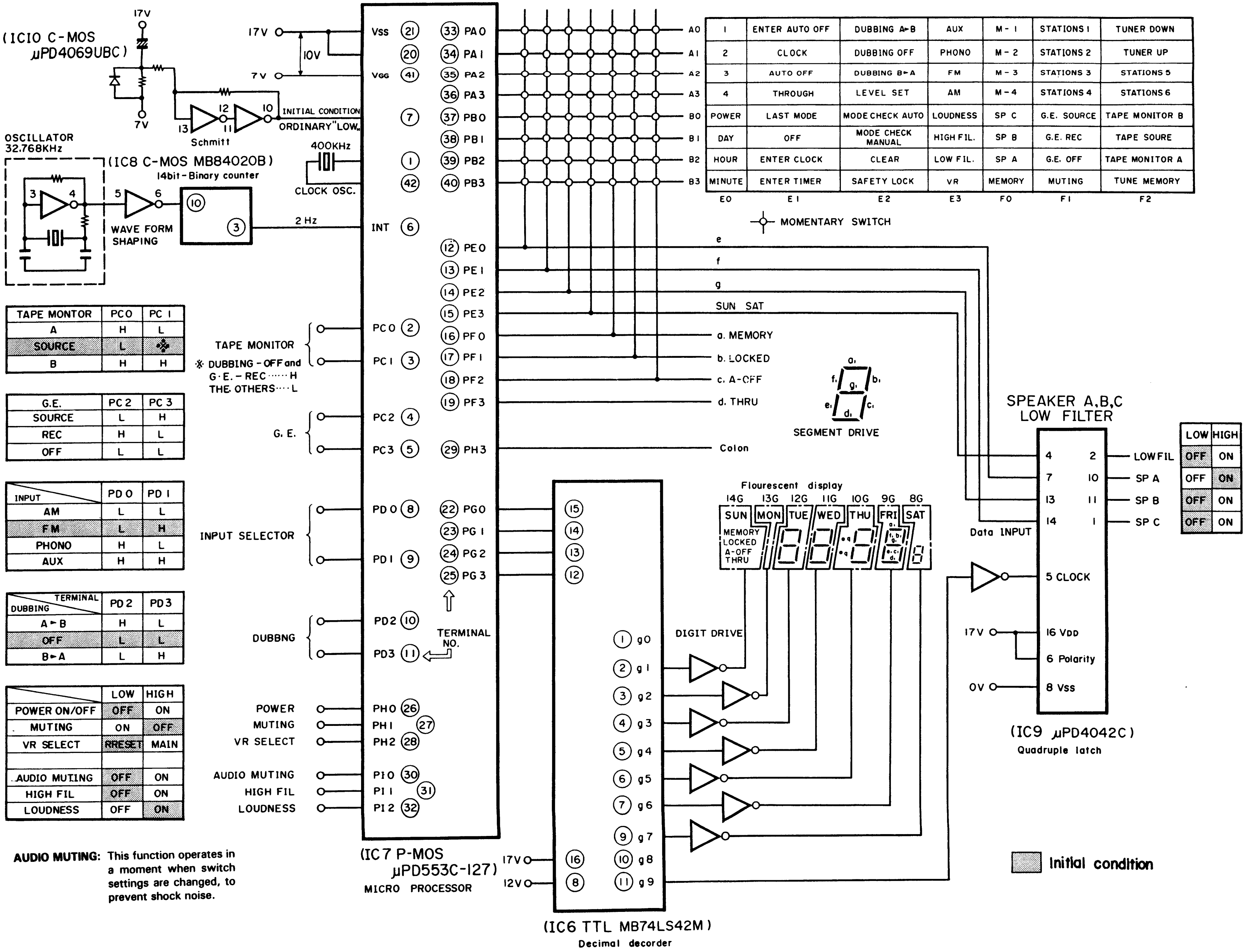
Fig. 13


$PI_{2\sim0}$
$PH_{3\sim0}$
$PG_{3\sim0}$
$PF_{3\sim0}$
$PE_{3\sim0}$
$PD_{3\sim0}$
$PC_{3\sim0}$
$PB_{3\sim0}$
$PA_{3\sim0}$
I
H
G
F
E
D
C
B
A
UP/DOWN COUNTER
INSTRUCTION-BUS 8bit
RAM DECODER
RAM 96×4
DP_L
DP_H
P-BUS
ALU
Q-BUS 4bit
C
C'
CONTROL & DECODE
ROM 2000×8
4bit
8bit
A_{cc}
8bit
PC
RAM BUFFER
TIMER
STACK 0
STACK 1
STACK 2
4bit
I/O INTERFACE
4bit
8bit
INTERRUPT CONTROL
CL_1
CL_0
CLOCK GENERATOR
INT
RES

DP : Data pointer
ALU : Arithmetic logic unit
A_{cc} : Accumulator
PC : Program counter
C : Carry F/F
C' : Carry save F/F

Fig. 14 Block Diagram

CIRCUIT DESCRIPTION


(ICIO C-MOS
µPD4069UBC)
17V
7V
OSCILLATOR
32.768KHz
(IC8 C-MOS MB84020B)
14bit-Binary counter
WAVE FORM
SHAPING
Schmitt
INITIAL CONDITION
ORDINARY "LOW"
17V
7V
IOV
400KHz
CLOCK OSC.
2 Hz
Vss ㉑ ⑳
VGG ㊶
⑦ ① ㊷
INT ⑥
PA0 ㉝ PA1 ㉞ PA2 ㉟ PA3 ㊱
PB0 ㊲ PB1 ㊳ PB2 ㊴ PB3 ㊵
PE0 ⑫ PE1 ⑬ PE2 ⑭ PE3 ⑮
PF0 ⑯ PF1 ⑰ PF2 ⑱ PF3 ⑲
PH3 ㉙
PG0 ㉒ PG1 ㉓ PG2 ㉔ PG3 ㉕
TERMINAL NO.
PC0 ② PC1 ③ PC2 ④ PC3 ⑤
PD0 ⑧ PD1 ⑨ PD2 ⑩ PD3 ⑪
PH0 ㉖ PH1 ㉗ PH2 ㉘
PI0 ㉚ PI1 ㉛ PI2 ㉜
TAPE MONITOR
G. E.
INPUT SELECTOR
DUBBNG
POWER
MUTING
VR SELECT
AUDIO MUTING
HIGH FIL
LOUDNESS
(IC7 P-MOS
µPD553C-127)
MICRO PROCESSOR
A0 A1 A2 A3 B0 B1 B2 B3
E0 E1 E2 E3 F0 F1 F2
MOMENTARY SWITCH
e
f
g
SUN SAT
a. MEMORY
b. LOCKED
c. A-OFF
d. THRU
Colon
a₁ b₁ c₁ d₁ e₁ f₁ g₁
SEGMENT DRIVE
Flourescent display
14G 13G 12G 11G 10G 9G 8G
SUN MON TUE WED THU FRI SAT
MEMORY
LOCKED
A-OFF
THRU
DIGIT DRIVE
⑮ ⑭ ⑬ ⑫
① g0 ② g1 ③ g2 ④ g3 ⑤ g4 ⑥ g5 ⑦ g6 ⑨ g7 ⑩ g8 ⑪ g9
17V ⑯
12V ⑧
(IC6 TTL MB74LS42M)
Decimal decorder
SPEAKER A,B,C
LOW FILTER
4 2
7 10
13 11
14 1
LOWFIL
SP A
SP B
SP C
Data INPUT
5 CLOCK
17V
16 VDD
6 Polarity
OV
8 Vss
(IC9 µPD4042C)
Quadruple latch

	E0	E1	E2	E3	F0	F1	F2
A0	1	ENTER AUTO OFF	DUBBING A►B	AUX	M - 1	STATIONS 1	TUNER DOWN
A1	2	CLOCK	DUBBING OFF	PHONO	M - 2	STATIONS 2	TUNER UP
A2	3	AUTO OFF	DUBBING B►A	FM	M - 3	STATIONS 3	STATIONS 5
A3	4	THROUGH	LEVEL SET	AM	M - 4	STATIONS 4	STATIONS 6
B0	POWER	LAST MODE	MODE CHECK AUTO	LOUDNESS	SP C	G.E. SOURCE	TAPE MONITOR B
B1	DAY	OFF	MODE CHECK MANUAL	HIGH FIL.	SP B	G.E. REC	TAPE SOURE
B2	HOUR	ENTER CLOCK	CLEAR	LOW FIL.	SP A	G.E. OFF	TAPE MONITOR A
B3	MINUTE	ENTER TIMER	SAFETY LOCK	VR	MEMORY	MUTING	TUNE MEMORY

TAPE MONTOR	PC0	PC1
A	H	L
SOURCE	L	※
B	H	H

※ DUBBING - OFF and
G·E. - REC ······ H
THE OTHERS ···· L

G.E.	PC2	PC3
SOURCE	L	H
REC	H	L
OFF	L	L

INPUT	PD0	PD1
AM	L	L
FM	L	H
PHONO	H	L
AUX	H	H

TERMINAL / DUBBING	PD2	PD3
A►B	H	L
OFF	L	L
B►A	L	H

	LOW	HIGH
POWER ON/OFF	OFF	ON
MUTING	ON	OFF
VR SELECT	RRESET	MAIN
AUDIO MUTING	OFF	ON
HIGH FIL	OFF	ON
LOUDNESS	OFF	ON

	LOW	HIGH
LOWFIL	OFF	ON
SP A	OFF	ON
SP B	OFF	ON
SP C	OFF	ON

AUDIO MUTING: This function operates in a moment when switch settings are changed, to prevent shock noise.

▨ **Initial condition**

CIRCUIT DESCRIPTION

3. Voltage regulator and dimmer circuit for lamps (X13-3160-10)

The KR-1000 has many built-in lamps. Variation of the lamp power supply voltage due to AC line voltage variations or variation in the output power will result in fluctuations in the amount of light output by the lamps. Therefore, the KR-1000 uses a voltage regulator to ensure stable power for the lamps.

See Fig. 16. Q33 is forward biased when the lamp ON/OFF signal level is "H" (+16 V) and the lamp is ON. The voltage at the emitter of Q33 is $V_Z+3\ V_D$; i.e., it is the sum of the voltage across Zener diode D57 (V_Z) and the forward voltages of doides D77, D55 and D56 (V_D each), since these diodes are connected to the emitter in series. The emitter voltage of Q65 is then $V_Z+2\ V_D$ since the base-emitter voltage of Q65 is regarded as V_D. Thus, the voltage applied to the lamp is kept constant ($V_Z+2\ V_D$) even if the lamp power supply voltage varies.

Q33 is OFF when the lamp ON/OFF signal level is "L" (0 V) since Q33 is reverse biased. Then, Q65 is OFF and the voltage is not supplied to the lamp.

D55 and D56 are shorted when the dimmer switch is turned ON while the lamp ON/OFF signal level is "H". Then, the emitter voltage of Q33 becomes V_Z+V_D and the emitter voltage of Q65 becomes V_Z. Thus, the lamp is dimmed. In practice, the lamp drive circuit drives many lamps.

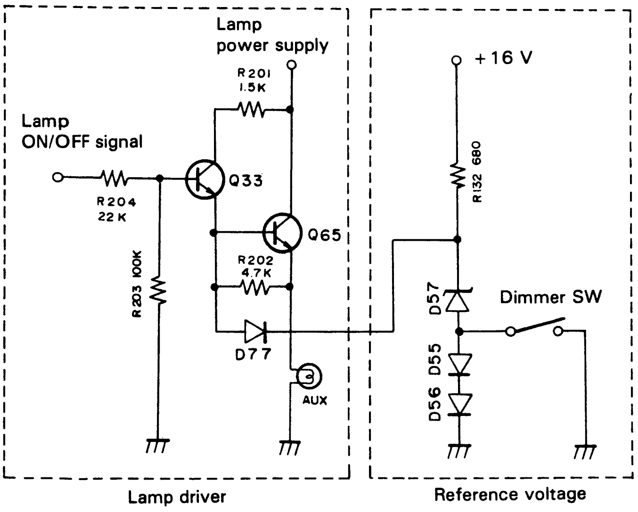

Lamp power supply
R201 1.5K
Lamp ON/OFF signal
Q33
R204 22K
Q65
R202 4.7K
R203 100K
D77
AUX
+16 V
R132 680
D57
Dimmer SW
D55
D56
Lamp driver
Reference voltage

Fig. 16 Lamp Drive Circuit

4. Fluorescent Display Tube Dimmer Circuit

A conventional dimmer circuit for a fluorescent display tube, which is dynamically driven, controls the duty ratio of the digit control pulse signal to shorten the time during which the segments are lit. (See Page 20).

In the KR-1000, the duty ratio of the digit control pulse signal is not varied, but is switched at high speed as shown in Fig. 17 so that the time during which the segments are lit is shortened. This method is also effective for a fluorescent display tube which is driven statically. (See Fig. 17).

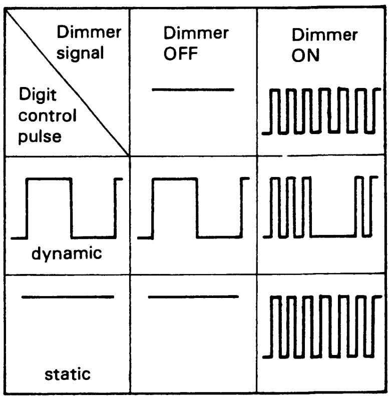

Dimmer signal
Digit control pulse
Dimmer OFF
Dimmer ON
dynamic
static

Fig. 17

Fig. 18 shows a dynamically driven fluorescent display tube dimmer circuit. A "H" level signal (+16 V) is applied to the dimmer signal input terminal when the dimmer function is OFF and Q46 is ON. Therefore, Q21 goes ON and its collector level becomes "H" when the digit out signal is "H", and Q21 is OFF and its collector level becomes "L" when the digit out signal is "L".

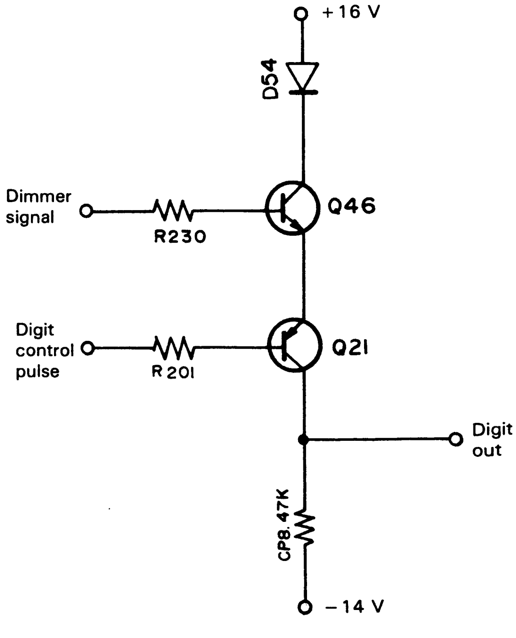

+16 V
D54
Dimmer signal
R230
Q46
Digit control pulse
R201
Q21
Digit out
CP8.47K
-14 V

Fig. 18 Dynamic Drive Circuit

CIRCUIT DESCRIPTION

When the dimmer function is ON, a 16 kHz pulse signal is applied to the dimmer signal input terminal. Q21 and Q46 operate in the same manner as when the dimmer function is OFF while the 16 kHz pulse signal is "H". Q46 is OFF while the pulse signal is "L", so the collector level of Q21 is "L" regardless of the level of the digit out signal.

Fig. 19 shows a statically driven fluorescent display tube dimmer circuit. A "H" level (+16 V) signal is applied to the dimmer signal input terminal when the dimmer function is OFF and Q28 is OFF; so, the collector level of Q28 is "L" (−14 V). Since Q30 is OFF and its collector level is "H", both the base and emitter of Q29 are "H". A 16 kHz pulse signal is applied to the dimmer signal input terminal when dimmer function is ON. Q28, Q29 and Q30 operate in the same manner as when the dimmer function is OFF when the pulse signal level is "H". When the pulse signal level is "L", Q28 is ON and its collector level is "H", so the base level of Q30 is "H" and Q30 is ON. Therefore, the grid level of the fluorescent display tube is dropped to "L" through D23 since the collector level of Q30 is "L".

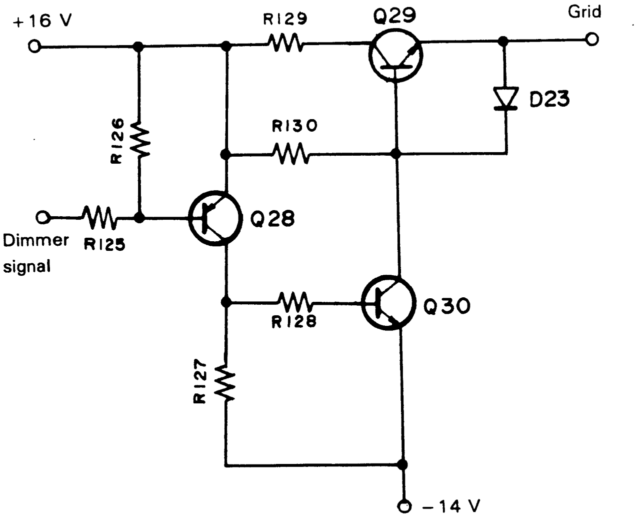


Fig. 19 Static Drive Circuit

5. Automatic Power Meter Range Switching Circuit (X11-1670-10)

The power meter range is switched manually in conventional amplifier systems, but with the KR-1000 it is automatically switched to the range in which the output power is easiest to read. The meter range is automatically changed from X0.1 to X1 when the output power increases to more than 20 W, and it is changed back to X0.1 when the output power is reduced to below 7 W.

In Fig. 20, Q21 and Q22 are emitter followers which prevent the automatic power meter range switching circuit being affecting the amplifier output circuits. The Q21 and Q22 output signals are rectified by the voltage doublers. When there is a difference between the output signal levels of the L and R channels, the diode in the voltage doubler which is connected to the low level channel (i.e., D13 or D14) is reverse biased and only the voltage doubler which is connected to the high level channel operates to charge C55. The DC voltage across C55 increases the base voltage of Q23 of the Schmitt trigger according to the time constant determined by R108, R109 and C56.

The base voltage of Q23 does not rise to turn it ON when the output power is relatively low. Therefore, the Schmitt trigger output level (at the collector of Q24) is not inverted and is kept at the "L" level. Thus, the collector level of Q25 is "H" and FET switches Q26 and Q27 are ON. The signals from the emitters of Q21 and Q22 pass through Q26 and Q27, then are applied to the fluorescent display tube drive ICs (IC5 and IC6) via the voltage doublers after being divided by the ON resistance (several tens of ohms) and R119 and R120, respectively. The collector level of Q25 is applied to pin 31 of the fluorescent display tube to light the X0.1 indicator on the display.

When the output power is relatively high, Q23, is ON and the Schmitt trigger output level is "H". Thus, the collector level of Q25 is "L" and Q26 and Q27 are OFF. The output signals of Q21 and Q22 are then divided by R117 and R119, and R118 and R120, respectively. Then they are applied to IC5 and IC6 via the voltage doublers. The collector level "L" of Q25 is applied to pin 31 of the fluorescent display tube so the X0.1 indicator goes OFF.

The reason the range switching level is different when the power increases from that when the power decreases is due to the hysteresis characteristics of the Schmitt trigger.

CIRCUIT DESCRIPTION

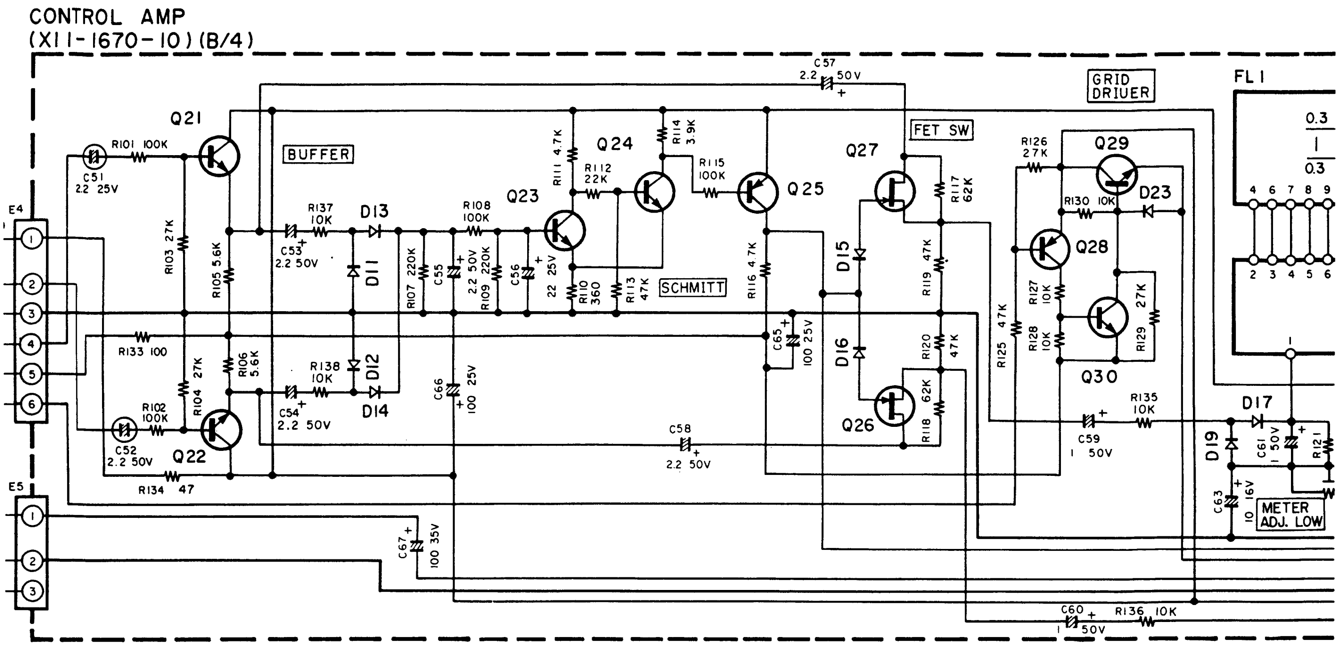

CONTROL AMP
(X11-1670-10)(B/4)
Q21
R101 100K
C51 22 25V
E4
1
2
3
4
5
6
BUFFER
R137 10K
D13
C53 2.2 50V
D11
R103 27K
R105 5.6K
R133 100
R138 10K
D12
C54 2.2 50V
D14
R102 100K
C52 2.2 50V
Q22
R104 27K
R106 5.6K
R134 47
E5
C67 100 35V
R108 100K
Q23
R107 220K
C55 2.2 50V
R109 220K
C56 22 25V
C66 100 25V
R111 4.7K
R112 22K
Q24
R114 3.9K
R115 100K
R110 360
R113 47K
SCHMITT
Q25
R116 4.7K
C57 2.2 50V
C58 2.2 50V
C65 100 25V
FET SW
Q27
D15
D16
Q26
R117 62K
R119 47K
R120 47K
R118 62K
GRID DRIUER
R126 27K
Q29
R130 10K
D23
Q28
R125 47K
R127 10K
R128 10K
R129 27K
Q30
R135 10K
C59 1 50V
C60 1 50V
R136 10K
FL1
0.3
0.3
4 6 7 8 9
2 3 4 5 6
D17
D19
C61 1 50V
R121
C63 10 16V
METER ADJ. LOW

Fig. 20 Automatic Power Meter Range Switching Circuit

6. Motor Drive Circuit

The KR-1000 uses a motor to control increases and decreases in sound volume. The volume control variable resistor (hereafter called MAIN-VR) is automatically set to the position which is determined by the preset variable resistor (PRESET-VR) when the power is turned ON. Thus, a certain volume level is always obtained when the power is turned ON. The volume level can then be manually changed by pressing the MAIN-VR UP or DOWN switch.

Fig. 21 shows the MAIN-VR control motor drive circuit. AMP-1 is an inverting amplifier with high gain. It becomes saturated and its output level becomes equal to the negative power supply voltage (−8 V) as soon as the input level exceeds 0 V. Its output level becomes equal to the positive power supply voltage (+8 V) when the input level is less than 0 V. Fig. 22 (a) shows the input voltage vs. output voltage characteristic of AMP-1.

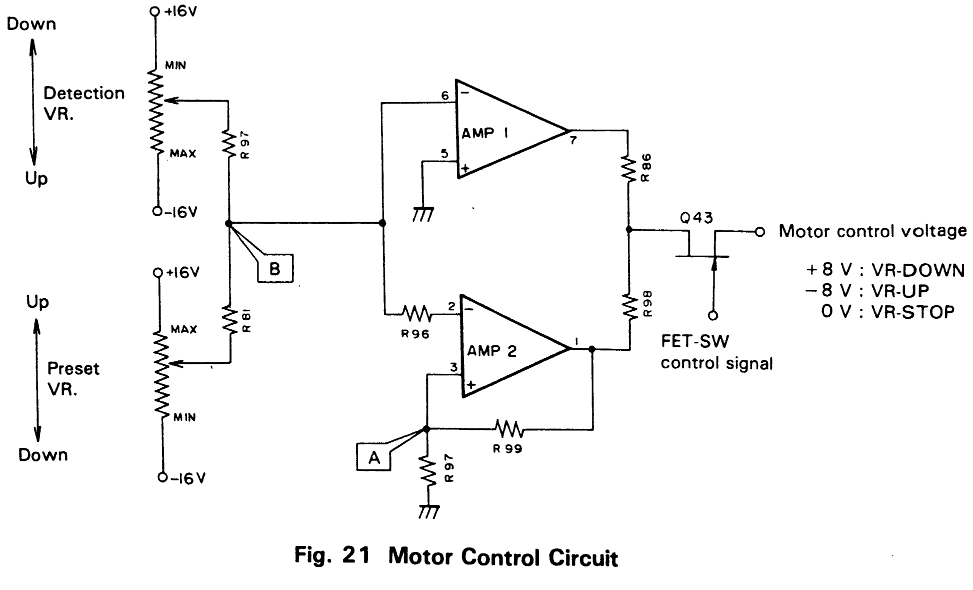
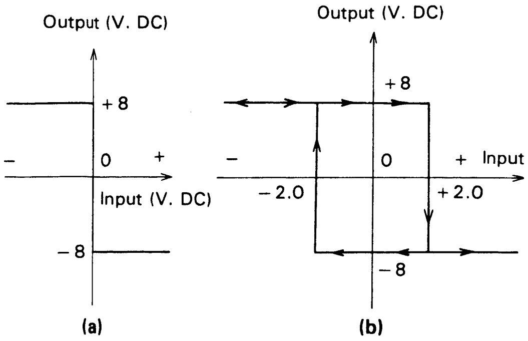

Down
Detection VR.
Up
+16V
MIN
MAX
-16V
R97
6
5
7
AMP 1
R98
Q43
Motor control voltage
+8 V : VR-DOWN
−8 V : VR-UP
0 V : VR-STOP
B
Up
Preset VR.
Down
+16V
MAX
MIN
-16V
R81
R96
2
3
1
AMP 2
R99
FET-SW control signal
A
R97

Fig. 21 Motor Control Circuit

CIRCUIT DESCRIPTION



(a) (b)

Fig. 22 Input vs. Output

AMP-2 operates as a Schmitt circuit. If the initial AMP-2 output level is –8 V, the voltage at point A (V_A) is given by

$$V_A = \frac{R97.V_O}{R97 + R99}$$

where V_O: output voltage

V_A is –2.0 V DC when $V_O = -8$ V, R97 = 51 kΩ and R99 = 150 kΩ. At this time, the output level is inverted when the input voltage is lower than –2.0 V DC and it is not inverted when the input level is –2.0 V DC or higher. V_A is 2.0 V DC when the output level is +8 V. At this time, the output level is inverted when the input level is higher than 2.0 V DC and it is not inverted when the input level is 2.0 V or lower. Fig. 22 (b) shows the input voltage vs. output voltage characteristic of AMP-2. The input voltage vs. output voltage characteristic of the motor control circuit is shown in Fig. 23.

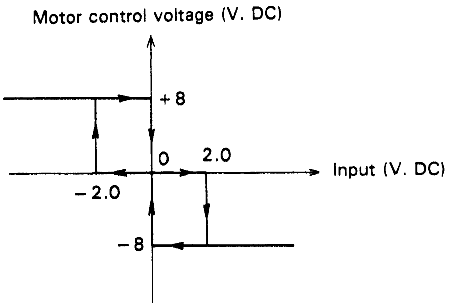


Fig. 23 Input vs. Motor Control Voltage

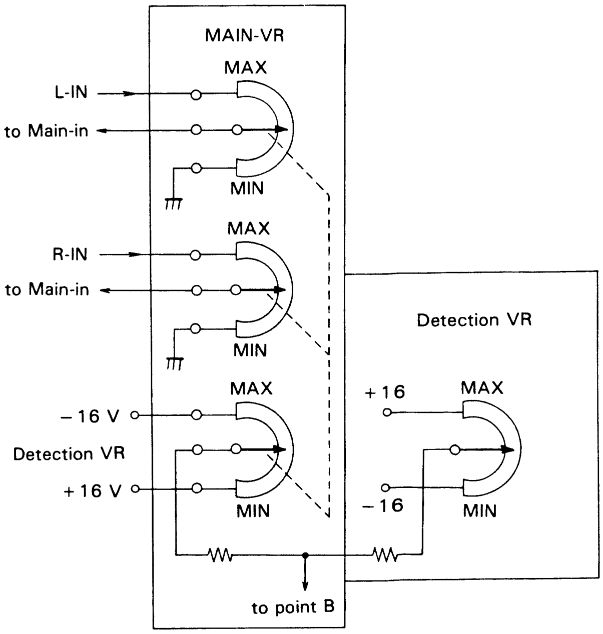


Fig. 24

The MAIN-VR incorporates variable resistors for adjusting the L and R channel volume levels and a variable resistor to detect the MAIN-VR setting position. The latter is called the detection VR. (See Fig. 24) The detection VR slider terminal level is –16 V when the MAIN-VR is set to MAX, and it is +16 V when the MAIN-VR is set to MIN. The preset VR slider terminal level is +16 V when the preset VR is set to MAX and it is –16 V when it is set to MIN. The voltage at point B is 0 V when the detection VR is set to the same position as the preset VR. It is positive when the detection VR is set to a higher sound level than the preset VR, and vice versa. The motor control voltage becomes –8 V when the voltage at point B is higher than 2.0 V. Therefore, the MAIN-VR is turned by the motor to increase the volume level until the voltage at point B becomes 0 V. The motor control voltage becomes +8 V when the voltage at point B is lower than –2.0 V, so the MAIN-VR is turned to lower the volume level until the voltage at point B becomes 0 V.

A "H" level signal is applied to the gate of Q43 when the power is turned ON. Therefore, Q43 goes ON and outputs the motor control signal according to the voltage at point B. Pressing either the MAIN-VR UP, or DOWN switch sets the gate level of Q43 to "L". Thus, Q43 goes OFF and the volume control can be adjusted manually.

CIRCUIT DESCRIPTION

7. Variable Power Supply

The KR-1000 uses analog switches to select input sources. The IC (μPD4066C) which incorporates analog switches has a maximum power supply voltage rating of just ± 9 V. If the circuit shown in Fig. 25 were used, the input signal would be clipped in the analog switch circuit when the input signal exceeds the power supply voltage. This would prevent sufficient dynamic range from being obtained. (See Fig. 26).

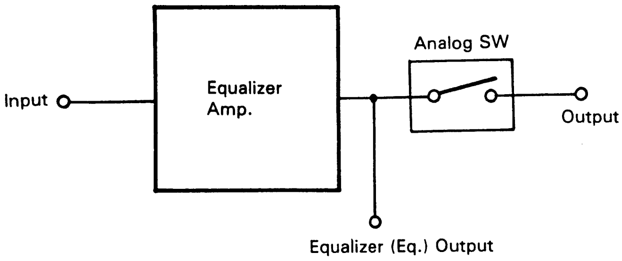

Input
Equalizer Amp.
Analog SW
Output
Equalizer (Eq.) Output

Fig. 25

To avert this, the positive and negative power supply voltages to the analog switches are shifted simultaneously according to the input signal level, as shown in Fig. 27, so that the input source signal is not clipped in the analog switch.

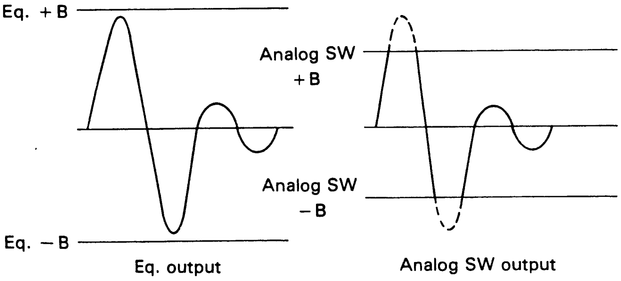

Eq. +B
Analog SW +B
Analog SW −B
Eq. −B
Eq. output
Analog SW output

Fig. 26

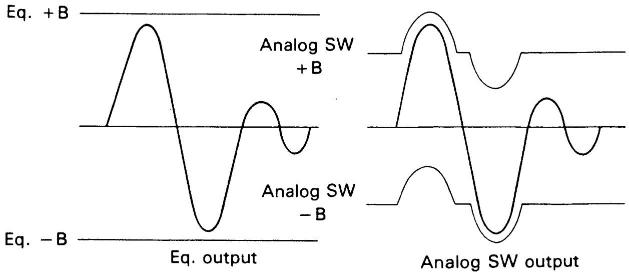
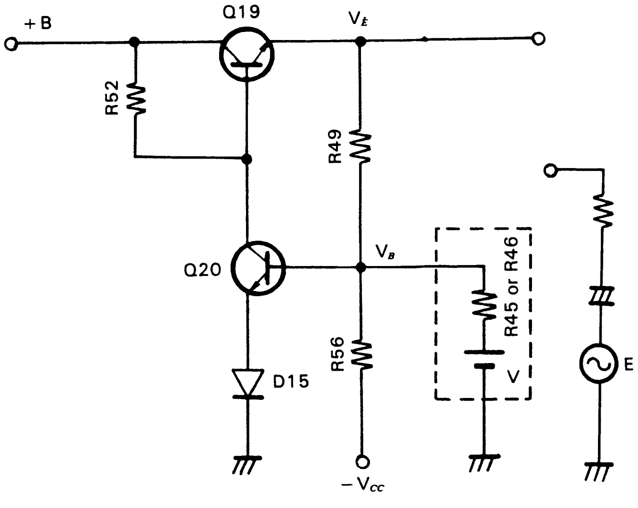

Eq. +B
Analog SW +B
Analog SW −B
Eq. −B
Eq. output
Analog SW output

Fig. 27

The principle of the variable power supply is explained with Fig. 28 (a). The circuit is an ordinary feedback type voltage regulator if the part indicated by the dotted line is not included. If the base voltage of Q20 is V_B and the emitter voltage of Q19 is V_E, then when the DC source voltage V is equal to V_B, no current flows through R45 and V_E does not vary. When $V > V_B$, the base current of Q20 increases because of the current through R46. Thus, the collector current of Q20 increases and the collector level drops so that the base voltage of Q19 and V_E drop. When $V < V_B$, current flows into the DC source through R46 and the base current of Q20 decreases, so the collector current decreases and the collector level rises. Thus, the base voltage of Q19 rises and V_E rises.

When the section enclosed in the dotted line is replaced with the AC power source shown in Fig. 28 (b), V_E varies 180 degrees out of phase with E.


+B
Q19
V_E
R52
R49
Q20
V_B
R45 or R46
V
R56
D15
$-V_{cc}$
E

(a) (b)

Fig. 28

CIRCUIT DESCRIPTION

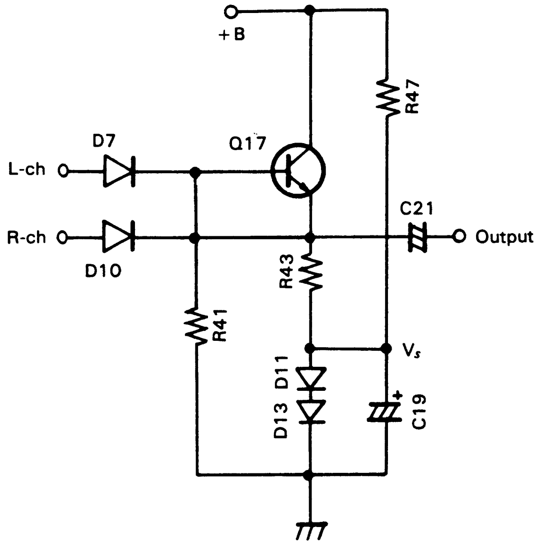


Fig. 29

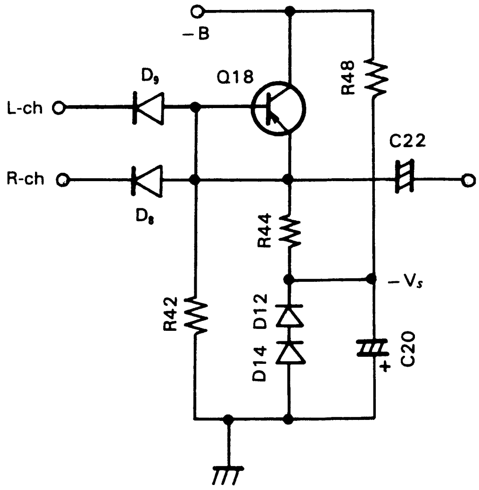


Fig. 30

It is not necessary to shift the power supply voltages when the input signal level is low and it is not clipped in the analog switch. The input signal is sliced by the circuit shown in Fig. 29, 30 so that output is obtained only when the input signal level exceeds a certain level. In Fig. 29, the diode which is connected to the channel whose signal level is higher than that of the other channel is forward biased and turned ON and the other diode is reverse biased and turned OFF. Thus, the higher level signal is applied to the bases of Q17. When no signal is applied, Q17 is OFF and its emitter level is equal to the sum of the ON voltages of D11 and D13. Q17 is turned ON when the voltage applied to its base exceeds V_{BE} (base-emitter voltage of Q17) plus V_S (the emitter voltage of Q17). Thus, Q17 outputs a signal at this time (See Fig. 31). The circuit shown in Fig. 29 slices the positive parts of the input signal and that shown in Fig. 30 slices the negative parts of the input signal. These signals are used to drive the base of Q20 (shown in Fig. 28) so that V_E is shifted according to the input signal level. The negative power supply voltage for the analog switch is generated by Zener diode D17 according to the level of V_E.

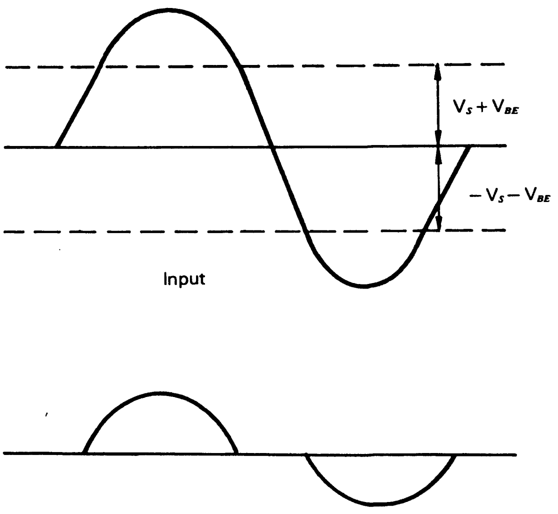


Fig. 31

8. Power Supply System

Fig. 32 shows the power supply system of the KR-1000. Transformer 2 is always supplied with power when the AC plug is inserted into an AC outlet; it supplies power to the microprocessor and synthesizer units. Transistors Q31, Q34, Q35 and Q36 from the +16 V, +11 V, +6 V and −14 V voltage regulators, respectively.

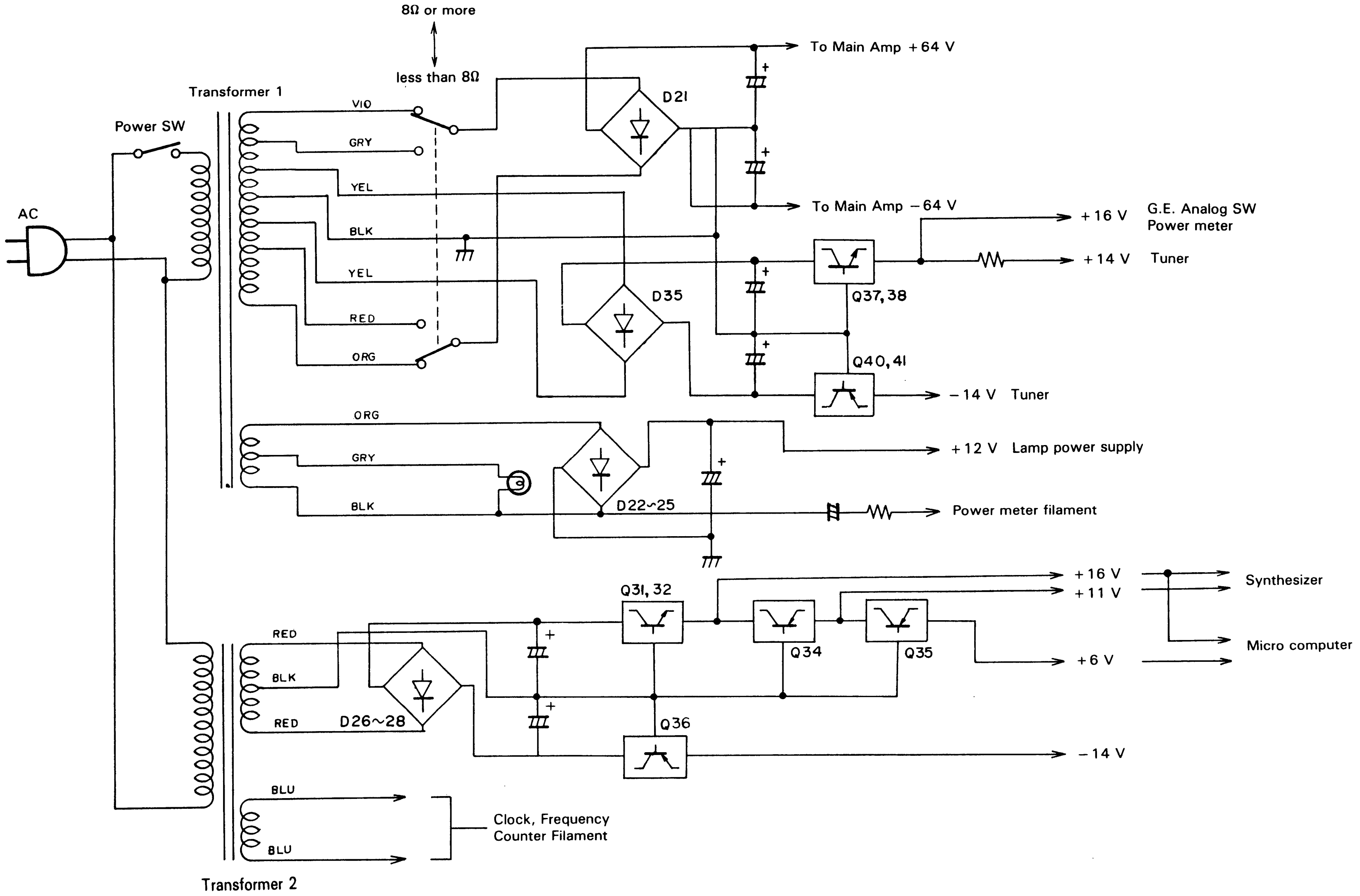

8Ω or more
less than 8Ω
Transformer 1
Power SW
AC
VIO
GRY
YEL
BLK
YEL
RED
ORG
D21
To Main Amp +64 V
To Main Amp −64 V
+16 V
G.E. Analog SW
Power meter
+14 V
Tuner
D35
Q37,38
Q40,41
−14 V
Tuner
ORG
GRY
BLK
D22~25
+12 V
Lamp power supply
Power meter filament
Q31, 32
+16 V
+11 V
Synthesizer
Q34
Q35
+6 V
Micro computer
RED
BLK
RED
D26~28
Q36
−14 V
BLU
BLU
Clock, Frequency
Counter Filament
Transformer 2

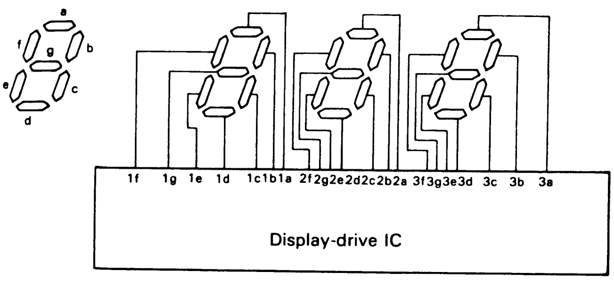
Fig. 32

CIRCUIT DESCRIPTION

7-SEGMENT MULTI-DIGIT INDICATOR DRIVING SYSTEM

There are two types of systems used for driving 7-segment multi-digit indicators and LED's: the static drive system and the dynamic drive system.

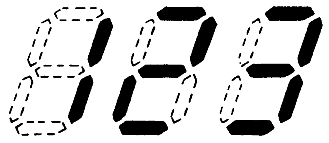
In the static drive system, the signal lines are connected to each segment of all the digits and the content of the display does not change with time.


a
b
c
d
e
f
g
1f 1g 1e 1d 1c 1b 1a 2f 2g 2e 2d 2c 2b 2a 3f 3g 3e 3d 3c 3b 3a
Display-drive IC

Assuming that each segment lights when its drive IC terminal is in the "H" (on) position, "123" is displayed as:

1a = "L", 1b = "H", 1c = "H", 1d = "L",
1e = "L", 1f = "L", 1g = "L"
2a = "H", 2b = "H", 2c = "L", 2d = "H",
2e = "H", 2f = "L", 2g = "H"
3a = "H", 3b = "H", 3c = "H", 3d = "H",
3e = "L", 3f = "L", 3g = "H"

The output of the drive IC does not change as long as "123" is being displayed.

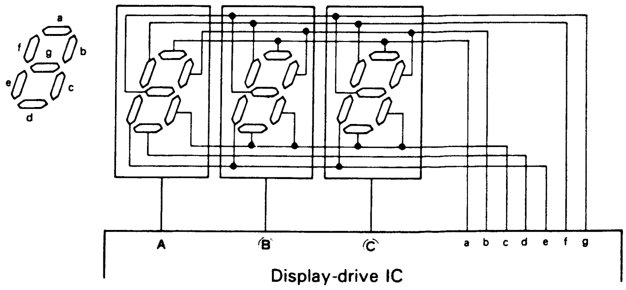


The drive circuit itself is simple in this system, but there must be a 1 : 1 correspondence between drive IC terminals and segments. This means that an increase in the number of digits displayed requires a increase in the number of IC terminals.

This relationship is expressed by n = 7d + c
(where, n: the number of the pins of the drive IC
d: the number of digits
c: the number of other IC terminals)

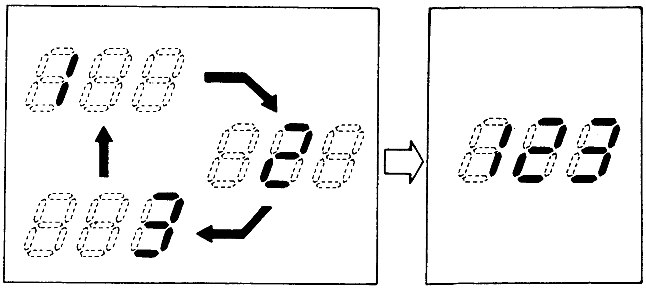
In a 3-digit display, the number of the pins of the drive IC is slightly more than 21, while in a 6-digit display it is 42 or more; this is more than the number of the pins found on an ordinary 40-pin LSI.

In the dynamic drive system, the segments in the same position in each digit are connected in parallel to the same signal line. Separate signal lines which indicate which digit is to be displayed are connected to each digit; these cause the segment signals to be applied to different digits on an alternating basis.
For example,



If all digit segments light when both the digit terminals (Ⓐ ~ Ⓒ) and segment terminals (a-g) of the drive IC are all set "H" (on), "123" would be displayed as follows:

The above outputs will cycle in sequence.



Actual display

Perceived display

If the frequency with which the outputs are cycled is low, the display digits will appear to flicker; for high frequencies, all digits will appear to be steadily lit. Although the drive circuit is highly sophisticated in this system, use of microcomputers, etc., in the drive IC virtually eliminates any problems.

The relationship between the number of display digits and drive IC terminals is given by n = 7 + d + c
(where, n: the number of the pins of the drive IC
d: the number of digits
c: the number of other IC terminals)

In a 3-digit display, the number of the pins of the drive IC may be only slightly more than 10, and in a 6-digit display it may also be only 13, which means a large decrease in the number of the pins compared with the static drive. The two systems explained above are used in various electronic applications depending upon their adaptability.

The static drive is used in applications such as audio timers, etc., which required relatively simple circuits with fewer digits, while the dynamic drive is employed in equipment incorporating microcomputers, such as FM synthesizer tuners.

ADJUSTMENT

NO.	ITEM	SYSTEM CONNECTIONS	TEST EQUIPMENT SETTING	TUNER (RECEIVER) SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG. NO.
FM SECTION							
1	**DISCRIMINATOR (1)**	(A)/Connect a DC voltmeter between terminals TPA and TPB.	100.1MHz 1kHz ±75kHz dev 60dB (ANT input)	FM MONO 100.1MHz WIDE	L1	0±400mV	**(a)**
2	**DISCRIMINATOR (2)**	(A) / (B)	100.1MHz 1kHz ±75kHz dev 60dB (ANT input)	FM MONO 100.1MHz WIDE	L2	Minimum distortion	
3	**VCO**	(A)/Connect a frequency counter to the junction of R31 and VR3 via an AC voltmeter.	100.1MHz 0 dev 100dB (ANT input)	FM STEREO 100.1MHz	VR3	Frequency: 76kHz ±200Hz	**(b)**
VCO: Voltage Controlled Oscillator							
4	**SEPARATION (WIDE)**	(C) / (B)	100.1MHz 1kHz ±68.25kHz dev Selector: L or R Pilot: ±6.75kHz dev 60dB (ANT input)	FM STEREO 100.1MHz WIDE	VR5	Minimum crosstalk. A compromise adjustment may be required if left-to-right and right-to-left separations are unequal.	
5	**PILOT CANCELLER**	(C) / (B)	100.1MHz Pilot signal 60dB	FM STEREO 100.1MHz	VR4	Minimum output	
6	**DISTORTION (STEREO)**	(C) / (B)	100.1MHz 1kHz ±68.25kHz dev Selector: L or R Pilot: ±6.75kHz dev 60dB (ANT input)	FM STEREO 100.1MHz	T2 (Front end)	Minimum distortion	
AM SECTION Keep the AM loop antenna installed.							
(1)	**BAND EDGE (1)**	(D)/Connect a DC voltmeter to TP6	1620kHz (1611) 400Hz, 30% mod	AM 1620kHz (1611)	TC1	DC voltage for ground: 8.5V	**(c)**
(2)	**BAND EDGE (2)**	(D)/Connect a DC voltmeter to TP6	530kHz (522) 400Hz, 30% mod	AM 530kHz (522)	L6	DC voltage for ground: 1.0V	**(c)**
(3)	**RF ALIGNMENT (AM)**	(D) / (B)	630kHz 400Hz, 30% mod	AM 630kHz	L5	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	**RF ALIGNMENT (AM)**	(D) / (B)	1440kHz 400Hz, 30% mod	AM 1440kHz	TC2	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
(5)	**IF TRANSFORMER**	(D) / (B)	990kHz 400Hz, 30% mod	AM 990kHz	L7	Maximum amplitude and symmetry of the oscilloscope display.	
(6)	**AM STOP LEVEL**	(D)	990kHz 400Hz, 30% mod 30dB (antenna input)	AM 990kHz SENSI-2	VR6	Adjust so that the tuned lamp just lights.	
(7)	**FLUORESCENT DISPLAY TUBE BRIGHTNESS ADJUSTMENT**	—	—	—	VR7	Match the brightness of the power meter and the frequency counter.	
AUDIO SECTION							
i	**OFFSET (CENTER)**	Connect a DC voltmeter between J10 (J11) and the ground	—	PHONO VOLUME 0	VR1 (L ch) (VR2 (R ch)) X00	0V	**(d)**
ii	**IDLE CURRENT (BIAS)**	Connect a DC voltmeter between terminals TP12 and TP13 (TP14 and TP15)	—	AUX VOLUME 0	VR1 (L ch) (VR2 (R ch)) X07	40~60mV	**(e)**
iii	**POWER METER**	(E) / (F)	1kHz 1V	METER range: ×0.1 Adjust VOLUME so that AC voltmeter indicates 0.49V	MET.ADJ.LOW VR11 (VR12)	0.03W	
iv	**POWER METER**	(E) / (F)	1kHz 1V	METER range: ×0.1 Adjust VOLUME so that AC voltmeter indicates 8.9V	MET.ADJ.HIGH VR13 (VR14)	10W	
Repeat alignments "iii, iv" several times.							

REGLAGES

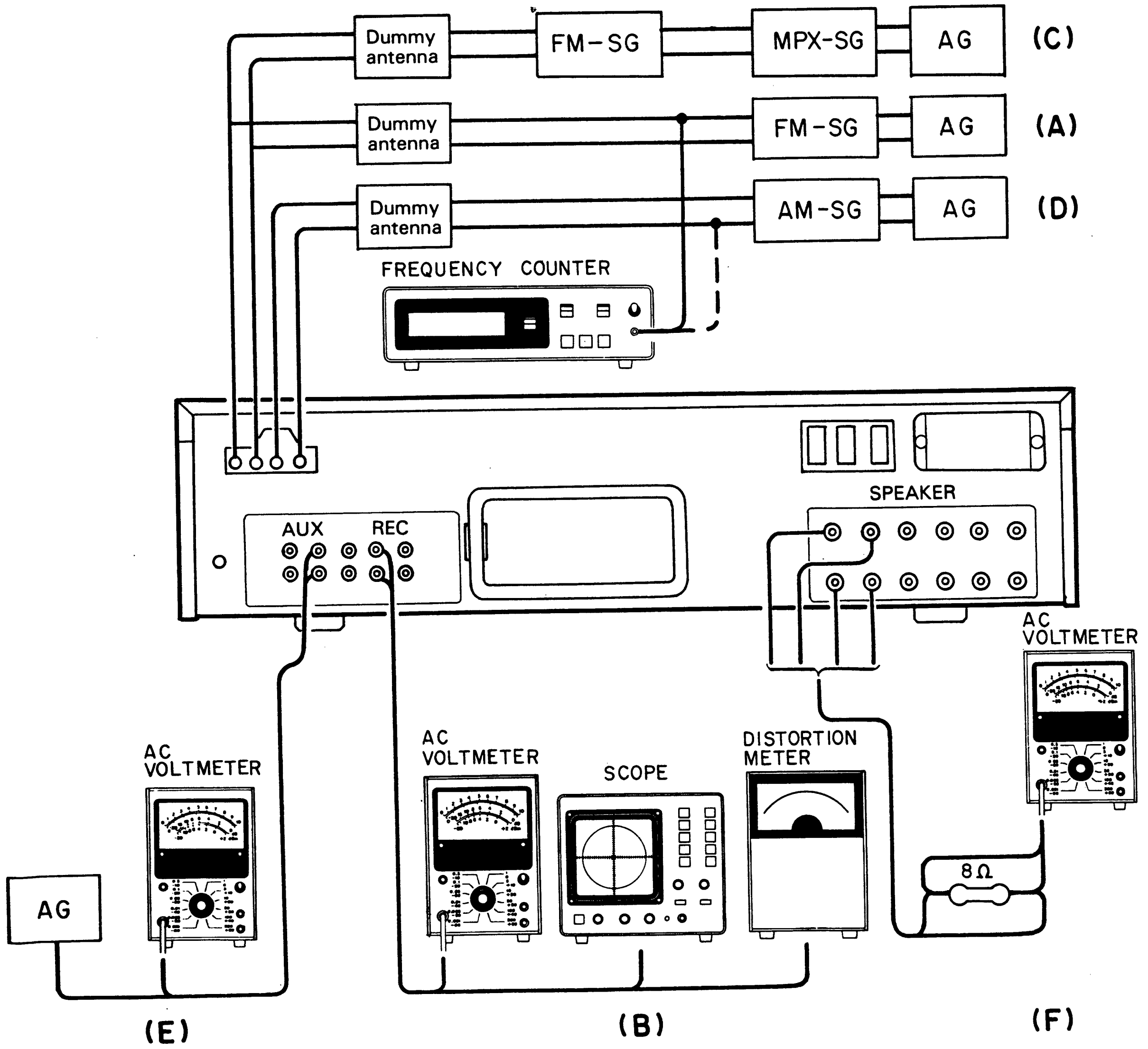
N°	ITEM	RACCORDEMENTS DU SYSTEME	REGLAGE DE L'APPAREILLAGE	REGLAGE DU TUNER (AMPLI-TUNER)	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG. N°
SECTION MF							
1	**DISCRIMINATEUR (1)**	(A)/Connecter un voltmètre CC entre terminales TPA et TPB	100,1MHz 1kHz ± 75kHz dév 60dB (Entrée ANT)	FM 100,1MHz WIDE	L1	0 ± 400mV	**(a)**
2	**DISCRIMINATEUR (2)**	(A) / (B)	100,1MHz 1kHz ± 75kHz dév 60dB (Entrée ANT)	FM MONO 100,1MHz WIDE	L2	Distortion minimale	
3	**OSCILLATEUR CONTROLE PAR LA TENSION**	(A)/Connecter un compteur de fréquence à la jonction de R31 et VR3 par un voltmètre CA	100,1MHz 0 dév 100dB (Entrée ANT)	FM STEREO 100,0MHz	VR3	Fréquence: 76kHz ± 200Hz	**(b)**
4	**SEPARATION (WIDE)**	(C) / (B)	100,1MHz 1kHz ± 68,25kHz dév Selection: L ou R Signal pilote: ± 6,75kHz dév 60dB (Entrée ANT)	FM STEREO 100,1MHz WIDE	VR5	Diaphonie minimale. Un compromis de réglage peut être nécessaire si les séparations de gauche à droite et de droite à gauche sont inégales.	
5	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE**	(C) / (B)	100,1MHz Signal pilote 60dB (Entrée ANT)	FM STEREO 100,1MHz	VR4	Sortie minimale	
6	**DISTORSION (STEREO)**	(C) / (B)	100,1MHz 1kHz ± 68,25kHz dév SELECTION L ou R Signal pilote ± 6,75kHz dév 60dB (Entrée ANT)	FM STEREO 100,1MHz	T2 (Tête H.T.)	Distorsion minimale	
SECTION MA	Laisser l'antenne boucle MA installée.						
(1)	**ALIGNEMENT H.T. (MA)**	(D)/Connecter un voltmètre CC à TP6	1620kHz (1611) 400Hz, 30% mod	AM 1620kHz (1611)	TC1	Tension continue pour terre: 8,5V	**(c)**
(2)	**ALIGNEMENT H.T. (MA)**	(D)/Connecter un voltmètre CC à TP6	530kHz (522) 400Hz, 30% mod	AM 530kHz (522)	L6	Tension continue pour terre: 1,0V	**(c)**
(3)	**ALIGNEMENT H.T. (MA)**	(D) / (B)	630kHz 400Hz, 30% mod	AM 630kHz	L5	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	**ALIGNEMENT H.T. (MA)**	(D) / (B)	1440kHz 400Hz, 30% mod	AM 1440kHz	TC2	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
	Répéter les points (3) et (4) plusieurs fois.						
(5)	**TRANSFORMATEUR F.I.**	(D) / (B)	990kHz 400Hz, 30% mod	AM 990kHz	L7	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(6)	**NIVEAU D'ARRET EN AM**	(D)	990kHz 400Hz 30% mod 30dB (entrée d'antenne)	AM 990kHz SENSI-2	VR6	Réglez de façon que le voyant accordé s'allume.	
(7)	**REGLAGE DE BRILLANCE DE L'AFFICHAGE FLUORESCENT**				VR7	Faites coïncider la brillance du compteur de puissance et du fréquence-mètre.	
SECTION AUDIO							
i	**DECALAGE (CENTER)**	Connecter un voltmètre CC entre J10 (J11) et la terre	—	PHONO VOLUME: 0	VR1 (gauche) (VR2 (droit)) X00	0V	**(d)**
ii	**COURANT DE POLARISATION (BIAS)**	Connecter un voltmètre CC entre terminales TP12 et TP13 (TP14 et TP15)	—	AUX VOLUME: 0	VR1 (gauche) (VR2 (droit)) X07	40 ~ 60mV	**(e)**
iii	**POWER METRE**	(E) / (F)	1kHz 1V	Régler le VOLUME en sorte que le VU-mètre indique 3W lorsque le voltmètre indique 0,49V	MET ADJ LOW VR11 (VR12)	0,03W	
iv	**POWER METRE**	(E) / (F)	1kHz 1V	Régler le VOLUME en sorte que le VU-mètre indique 3W lorsque le voltmètre indique 8,9V	MET ADJ HIGH VR13 (VR14)	10W	
	Répéter les points iii et iv plusieurs fois.						

ABGLEICH

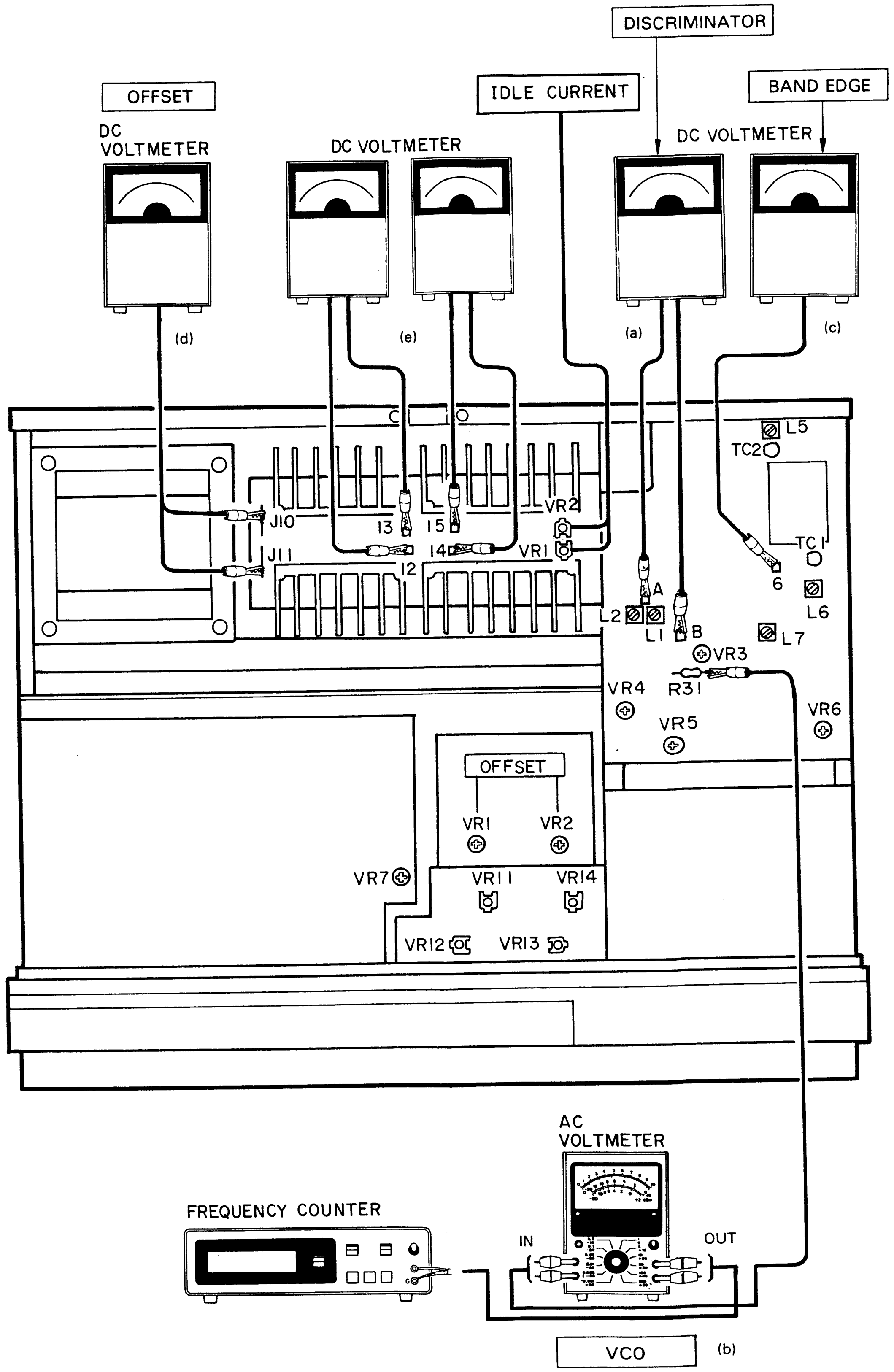
NR.	GEGENSTAND	SYSTEM-ANSCHLÜSSE	PRÜFEINRICHTUNG-EINSTELLUNG	TUNER (RECEIVER)-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB. NR.
UKW-ABTEILUNG							
1	**DISKRIMINATOR (1)**	(A)/Einen Gleichspannungsmesser zwischen Klemmen TPA und TPB.	100.1MHz 1kHz ±75kHz Hub 60dB (ANT-Eingang)	FM MONO 100.1MHz WIDE	L1	0±400mV	**(a)**
2	**DISKRIMINATOR (2)**	(A) / (B)	100.1MHz 1kHz ±75kHz Hub 60dB (ANT-Eingang)	FM MONO 100.1MHz WIDE	L2	Minimaler Klirrfaktor	
3	**SPANNUNGS-GEREGELTER OSZILLATOR**	(A)/Einen Frequenzmesser zur Verbinddung von R31 und VR3 über einem Wechselspannungsmesser anschließen.	100.1MHz 0 Hub 100dB (ANT-Eingang)	FM MONO 100.1MHz	VR3	Frequenz: 76kHz ±200Hz	**(b)**
4	**STEREO KANAL TRENNUNG (WIDE)**	(C) / (B)	100.1MHz 1kHz ±68,25kHz Hub Wähler: L oder R Pilotton: ±6,75kHz Hub 60dB (ANT-Eingang)	FM STEREO 100.1MHz WIDE	VR5	Minimales Übersprechen. Eine Ausgleichrege lung kann notwendig sein, falls links-zu-rechts und rechts-zu-links Trennungen ungleich sind.	
5	**PILOT-LÖSCHER**	(C) / (B)	100.1MHz Pilotsignal 60dB	FM STEREO 100.1MHz	VR4	Minimaler Ausgang	
6	**KLIRRFAKTOR (STEREO)**	(C) / (B)	100.1MHz 1kHz ±68,25kHz Hub Wähler: L oder R Pilotton: ±6,75kHz Hub 60dB (ANT-Eingang)	FM STEREO 100.1MHz	T2 (Frontende)	Minimaler Klirrfaktor	
MW-ABTEILUNG	Die MW-Rahmenangenne angebracht lassen.						
(1)	**HF-ABGLEICH (MW)**	(D)/Einen Gleichspannungsmesser zu TP6	1620kHz (1611) 400Hz, 30% mod	AM 1620kHz (1611)	TC1	Gleichspannung für Erde: 8.5V	**(c)**
(2)	**HF-ABGLEICH (MW)**	(D)/Einen Gleichspannungsmesser zu TP6	530kHz (522) 400Hz 30% mod	AM 530kHz (522)	L6	Gleichspannung für Erde: 1.0V	**(c)**
(3)	**HF-ABGLEICH (MW)**	(D) / (B)	630kHz 400Hz 30% mod	AM 630kHz	L5	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	**HF-ABGLEICH (MW)**	(D) / (B)	1440kHz 400Hz, 30% mod	AM 1440kHz	TC2	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	**ZF-ÜBERTRAGER**	(D) / (B)	990kHz 400Hz, 30% mod	AM 990kHz	L7	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(6)	**AM-SPERRSCHWELLE**	(D)	990kHz, 400Hz 30% mod 30dB (Antenneneigang)	AM 990kHz SENSI-2	VR6	So einstellen, daß die abgestimte Anzeigelampe gerade aufleuchtet.	
(7)	**HELLIGKEITSEINSTELLUNG DER FLUORESZENZ-ANZEIGE**				VR7	Die Helligkeit des Leistungs-Meters und des Frequenzzählers aufeinander abstimmen.	
AUDIO-ABTEILUNG							
i	**VERSCHIEBUNG (CENTER)**	Einen Gleichspannungsmesser zwischen Klemme J10 (J11) und der Erde.	–	PHONO VOLUME: 0	VR1 (linken Kanal) VR2 (rechten Kanal)	0V	**(d)**
ii	**LEERLAUFSTROM (BIAS)**	Einen Gleichspannungsmesser zwischen Klemmen TP12 und TP13 (TP14 und TP15)	–	AUX VOLUME: 0	VR1 (linken Kanal) VR2 (rechten Kanal)	40～60mV	**(e)**
iii	**LEISTUNGS-MESSER**	(E) / (F)	1kHz 1V	Den VOLUMEN so regulieren, daß die Gleichspannungsmesser Ablesung 0.49V ist.	MET ADJ LOW VR11 (VR12)	0.03W	
iv	**LEISTUNGS-MESSER**	(E) / (F)	1kHz 1V	Den VOLUMEN so regulieren, daß die Gleichspannungsmesser Ablesung 8.9V ist.	MET ADJ LOW VR13 (VR14)	10W	
Abstimmungen "iii und iv" mehrere male wiederholen.							

ADJUSTMENT/REGLAGES/ABGLEICH

TEST INSTRUMENT	APPAREILLAGE	PRÜFINSTRUMENTE	
Oscilloscope	Oscilloscope	Oszilloskop	SCOPE
AM signal generator	Générateur MA	MW-Signalgenerator	AM-SG
FM signal generator	Générateur MF	UKW-Signalgenerator	FM-SG
Audio generator	Générateur audio fréquences	NF-Signalgenerator	AG
AC voltmeter	Voltmètre CA	Wechselspannungsmesser	
FM multiplex generator	Générateur multiplex stéréo	UKW-Multiplexgenerator	FM-MPX
Frequency counter	Fréquencemètre	Frequenzzähler	
DC voltmeter	Voltmètre CC	Gleichspannungsmesser	
Distortion meter	Distorsiomètre	Klirrfaktormesser	
Dummy antenna	Antenne fictive	Antennennachbildung	


Dummy antenna
FM-SG
MPX-SG
AG
(C)
Dummy antenna
FM-SG
AG
(A)
Dummy antenna
AM-SG
AG
(D)
FREQUENCY COUNTER
SPEAKER
AUX
REC
AC VOLTMETER
AG
AC VOLTMETER
SCOPE
DISTORTION METER
AC VOLTMETER
8Ω
(E)
(B)
(F)

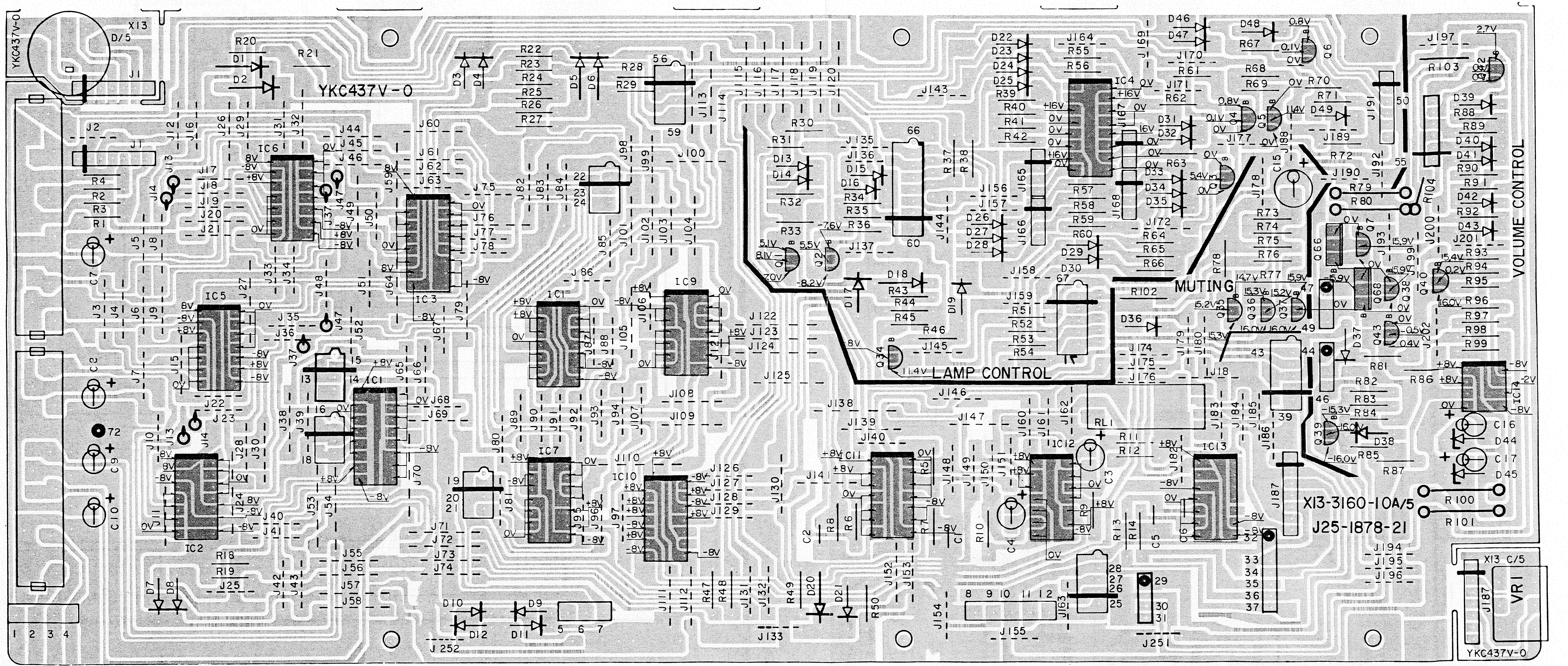
ADJUSTMENT/REGLAGES/ABGLEICH


DISCRIMINATOR
OFFSET
IDLE CURRENT
BAND EDGE
DC VOLTMETER
DC VOLTMETER
DC VOLTMETER
(d)
(e)
(a)
(c)
L5
TC2
J10
J11
13
15
14
12
VR2
VR1
TC1
6
A
L2
L1
B
L6
L7
VR3
R31
VR4
VR5
VR6
OFFSET
VR1
VR2
VR7
VR11
VR14
VR12
VR13
AC VOLTMETER
FREQUENCY COUNTER
IN
OUT
VCO
(b)

KR-1000/B KR-1000/B

PC BOARD

SWITCH (X13-3160-10) Foil side view

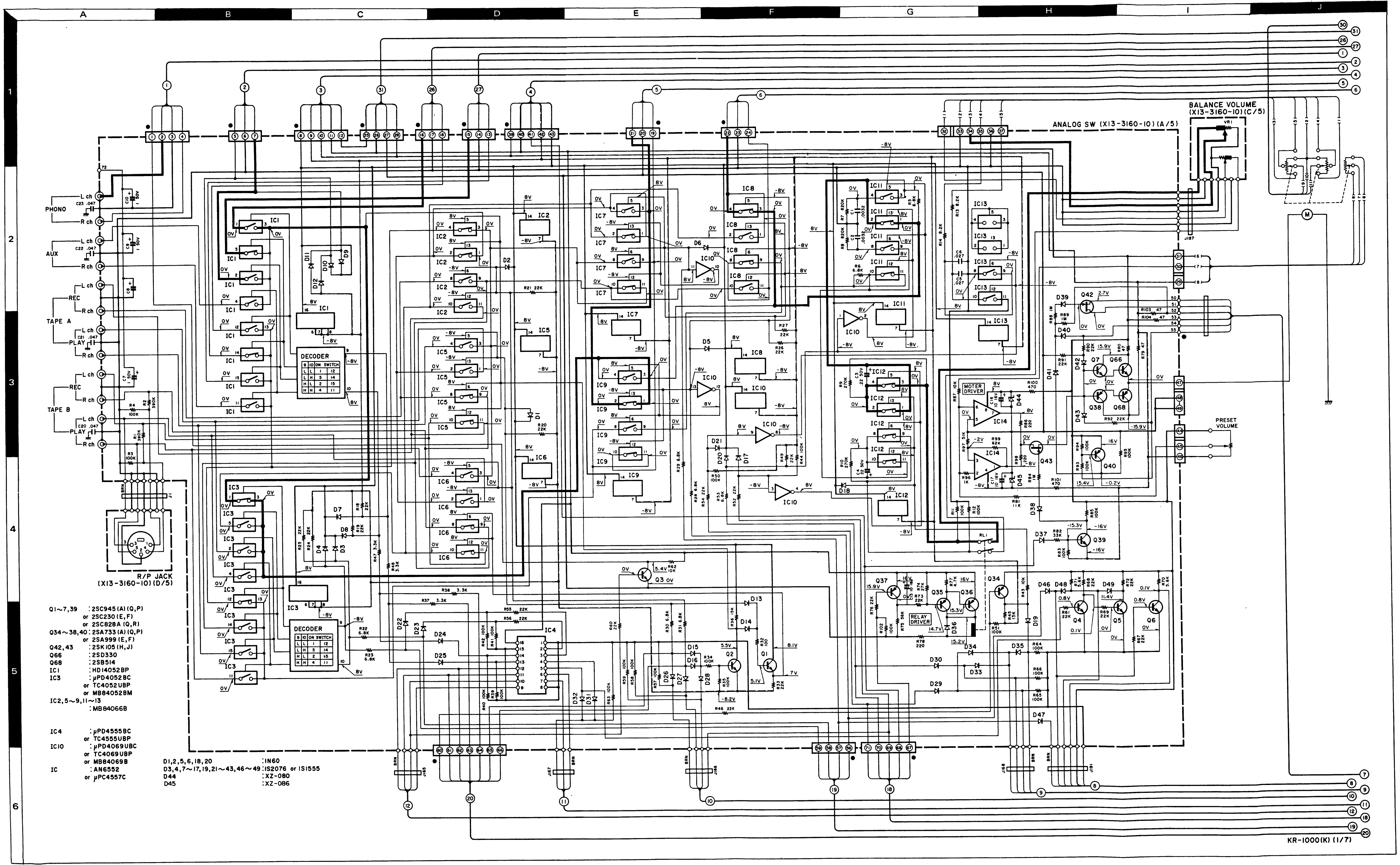

X13 D/5
YKC437V-0
J1
J2
IC1
IC2
IC3
IC5
IC6
IC7
IC9
IC10
IC12
IC13
IC14
IC4
RL1
LAMP CONTROL
MUTING
VOLUME CONTROL
X13-3160-10A/5
J25-1878-21
X13 C/5
VR1
J252
J251
J133
J155
1 2 3 4
5 6 7
8 9 10 11 12
72

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

KENWOOD

AM-FM STEREO RECEIVER

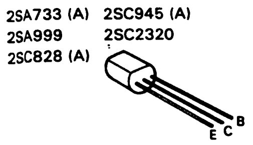
KR-1000/B

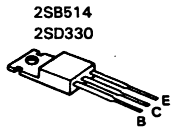

A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
PHONO
AUX
TAPE A
TAPE B
REC
PLAY
L ch
R ch
R/P JACK
(X13-3160-10)(D/5)
ANALOG SW (X13-3160-10)(A/5)
BALANCE VOLUME
(X13-3160-10)(C/5)
VR1
PRESET VOLUME
DECODER
ON SWITCH
MOTOR DRIVER
RELAY DRIVER
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
RL1
J187
KR-1000(K) (1/7)

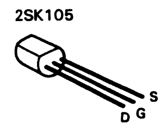
Q1～7,39 : 2SC945(A)(Q,P)
or 2SC230(E,F)
or 2SC828A(Q,R)
Q34～38,40 : 2SA733(A)(Q,P)
or 2SA999(E,F)
Q42,43 : 2SK105(H,J)
Q66 : 2SD330
Q68 : 2SB514
IC1 : HD14052BP
IC3 : µPD4052BC
or TC4052UBP
or MB84052BM
IC2,5～9,11～13
: MB84066B

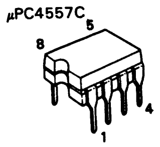
IC4 : µPD4555BC
or TC4555UBP
IC10 : µPD4069UBC
or TC4069UBP
or MB84069B
IC : AN6552
or µPC4557C

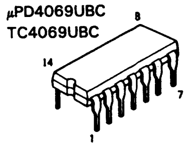
D1,2,5,6,18,20 : IN60
D3,4,7～17,19,21～43,46～49 : IS2076 or IS1555
D44 : XZ-080
D45 : XZ-086

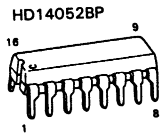

2SA733 (A)
2SA999
2SC828 (A)
2SC945 (A)
2SC2320
E
C
B

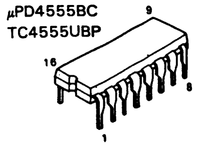

2SB514
2SD330
B
C
E

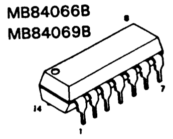


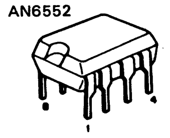

µPC4557C
8
5
4
1


µPD4069UBC
TC4069UBC
14
8
7
1


HD14052BP
16
9
8
1

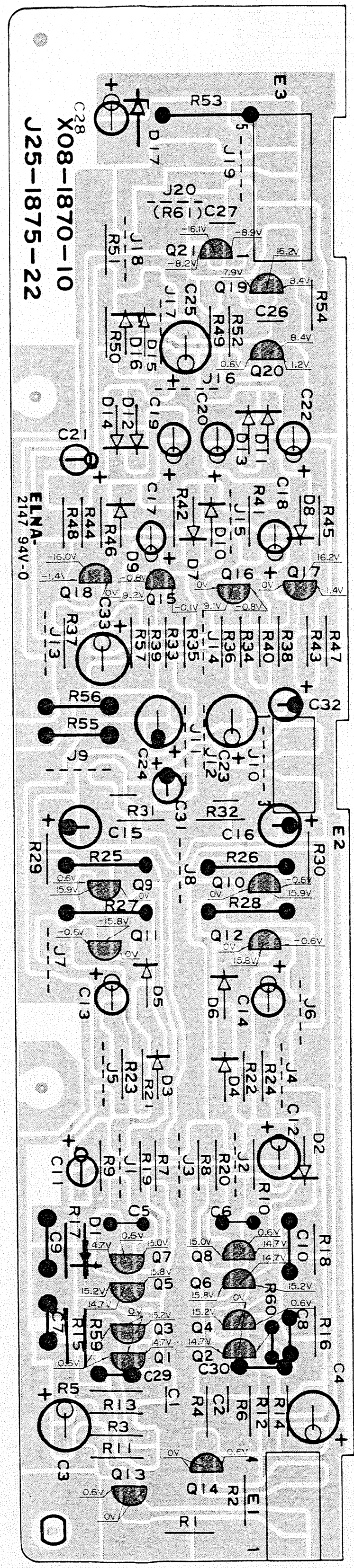

µPD4555BC
TC4555UBP
16
9
8
1


MB84066B
MB84069B
14
8
7
1

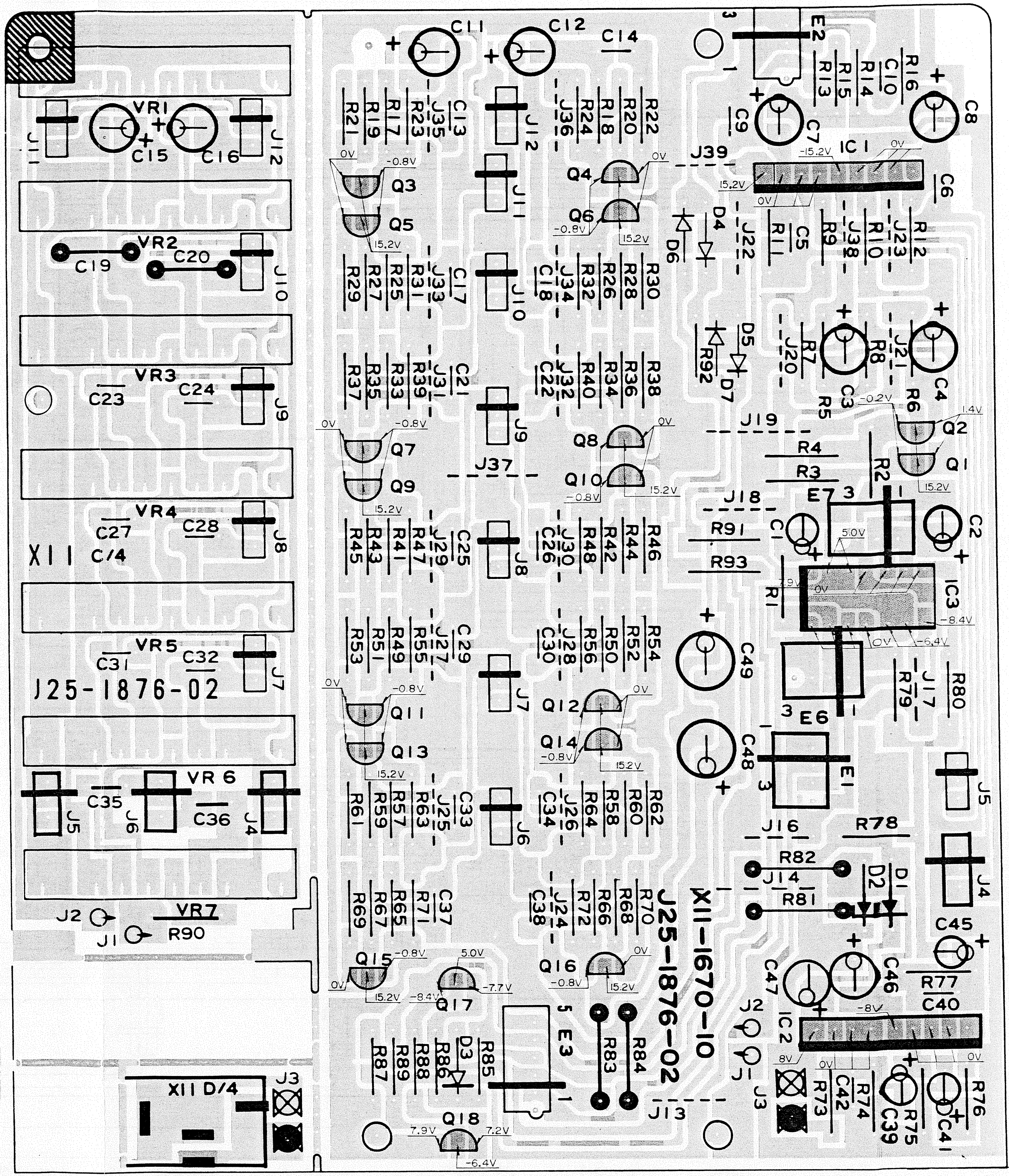


PC BOARD

PRE AMP (X08-1870-10) Component side view


X08-1870-10
J25-1875-22
ELNA 2147 94V-0

TONE AMP (X11-1670-10) Component side view


X11-1670-10
J25-1876-02
X11 C/4
X11 D/4

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

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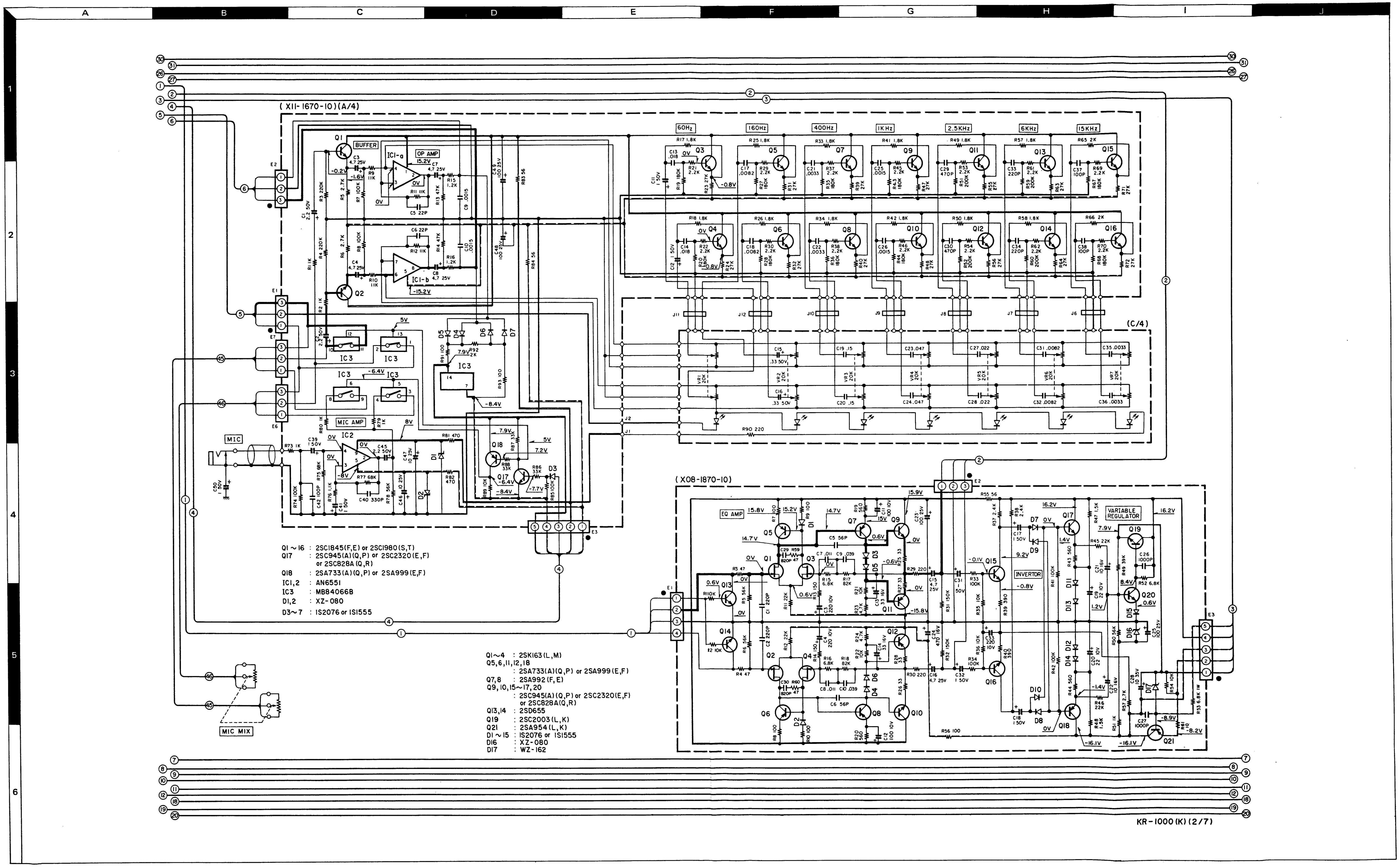
AM-FM STEREO RECEIVER

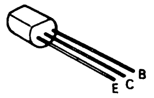
KR-1000/B


A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
(X11-1670-10)(A/4)
(C/4)
(X08-1870-10)
BUFFER
OP AMP
IC1-a
IC1-b
IC3
MIC AMP
IC2
MIC
MIC MIX
60Hz
160Hz
400Hz
1KHz
2.5KHz
6KHz
15KHz
EQ AMP
VARIABLE REGULATOR
INVERTOR
E1
E2
E3
E6
E7
J1
J2
J6
J7
J8
J9
J10
J11
J12
KR-1000(K)(2/7)

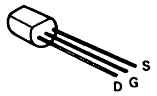
Q1 ~ 16 : 2SC1845(F,E) or 2SC1980(S,T)
Q17 : 2SC945(A)(Q,P) or 2SC2320(E,F)
or 2SC828A(Q,R)
Q18 : 2SA733(A)(Q,P) or 2SA999(E,F)
IC1,2 : AN6551
IC3 : MB84066B
D1,2 : XZ-080
D3~7 : IS2076 or IS1555

Q1~4 : 2SK163(L,M)
Q5,6,11,12,18
: 2SA733(A)(Q,P) or 2SA999(E,F)
Q7,8 : 2SA992(F,E)
Q9,10,15~17,20
: 2SC945(A)(Q,P) or 2SC2320(E,F)
or 2SC828A(Q,R)
Q13,14 : 2SD655
Q19 : 2SC2003(L,K)
Q21 : 2SA954(L,K)
D1 ~ 15 : IS2076 or IS1555
D16 : XZ-080
D17 : WZ-162

2SA733 (A)	2SC828
2SA945 (A)	2SC945 (A)
2SA954	2SC2003
2SA992	2SC2320
2SA999	2SD655

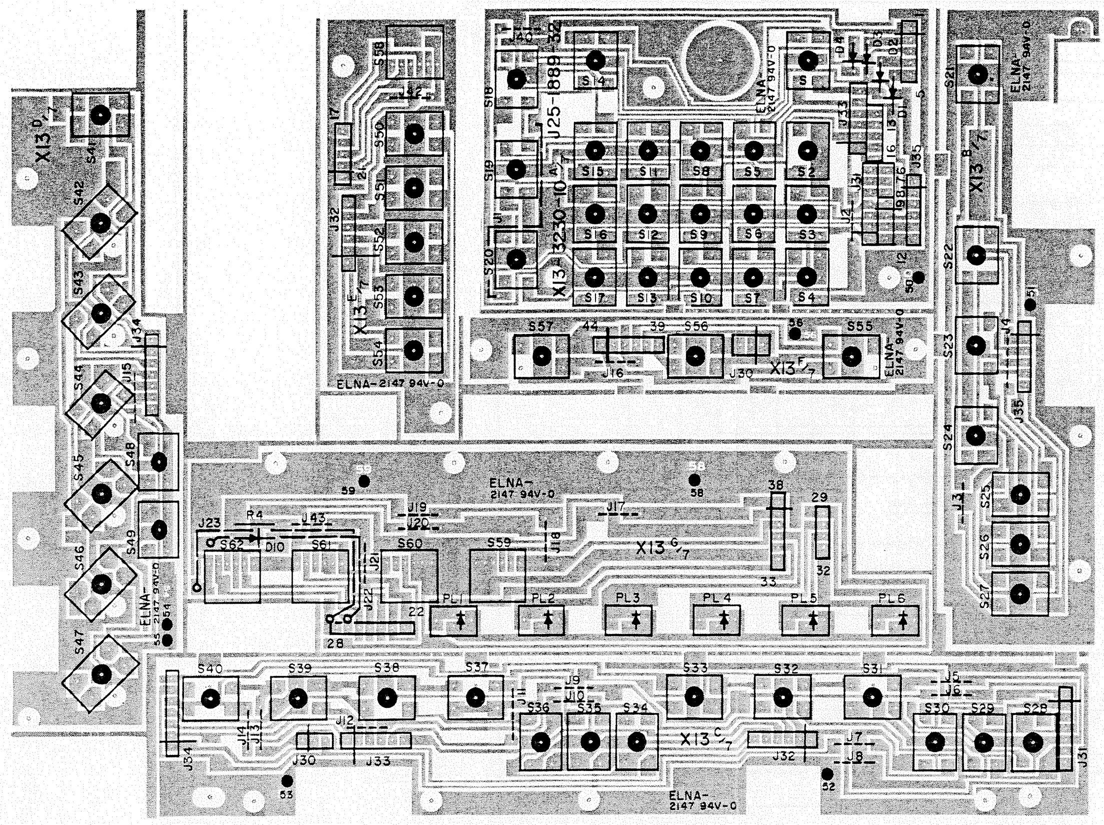


2SK163

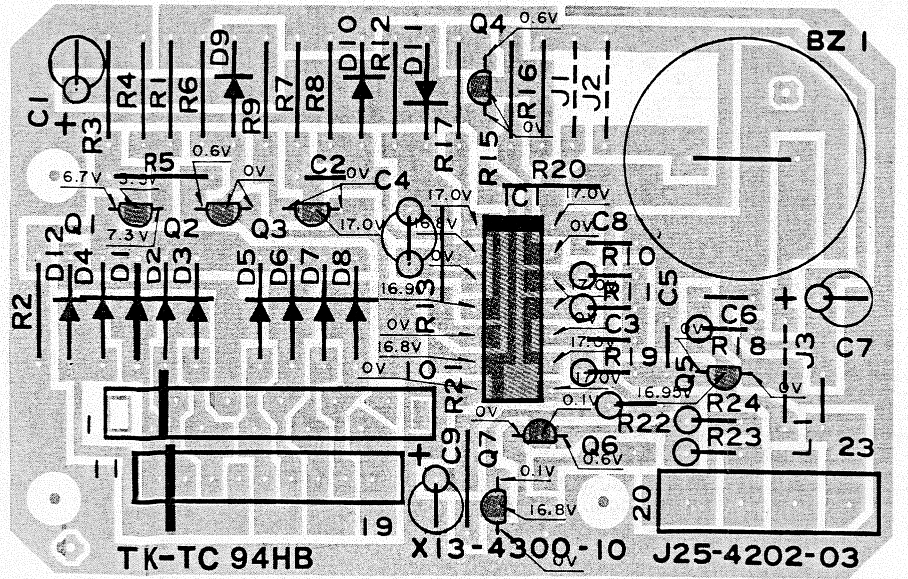


PC BOARD

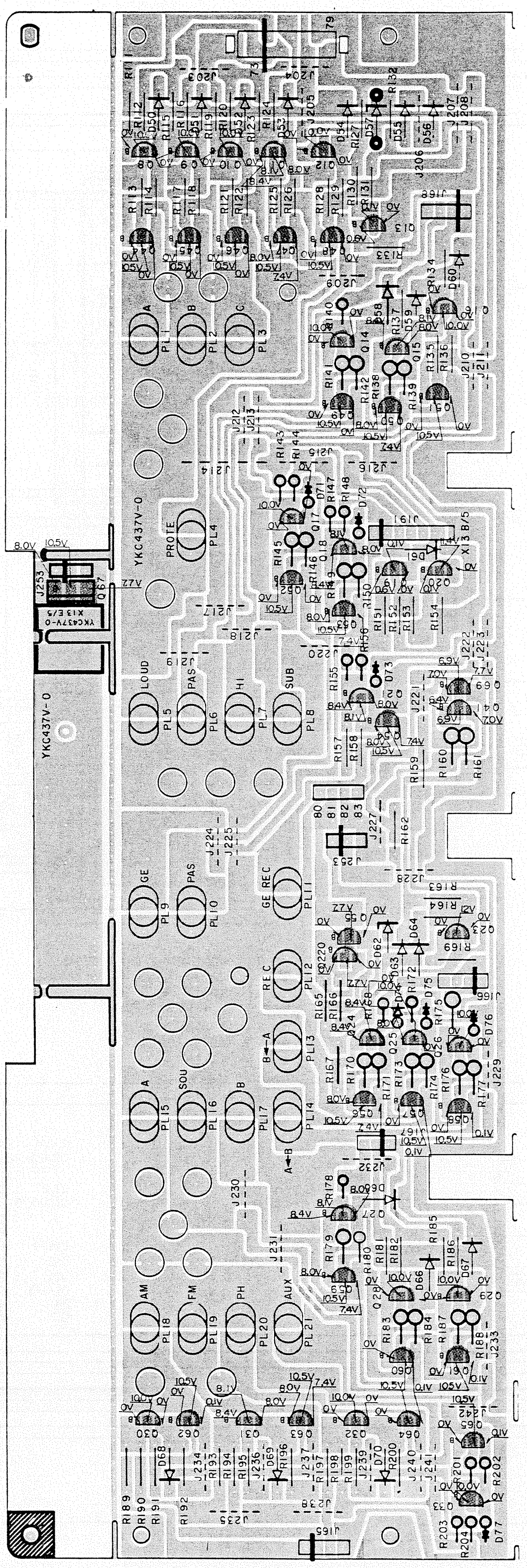
PUSH BUTTON (X13-3230-10) Foil side view


X13-3230-10
ELNA-2147 94V-0
PL1
PL2
PL3
PL4
PL5
PL6

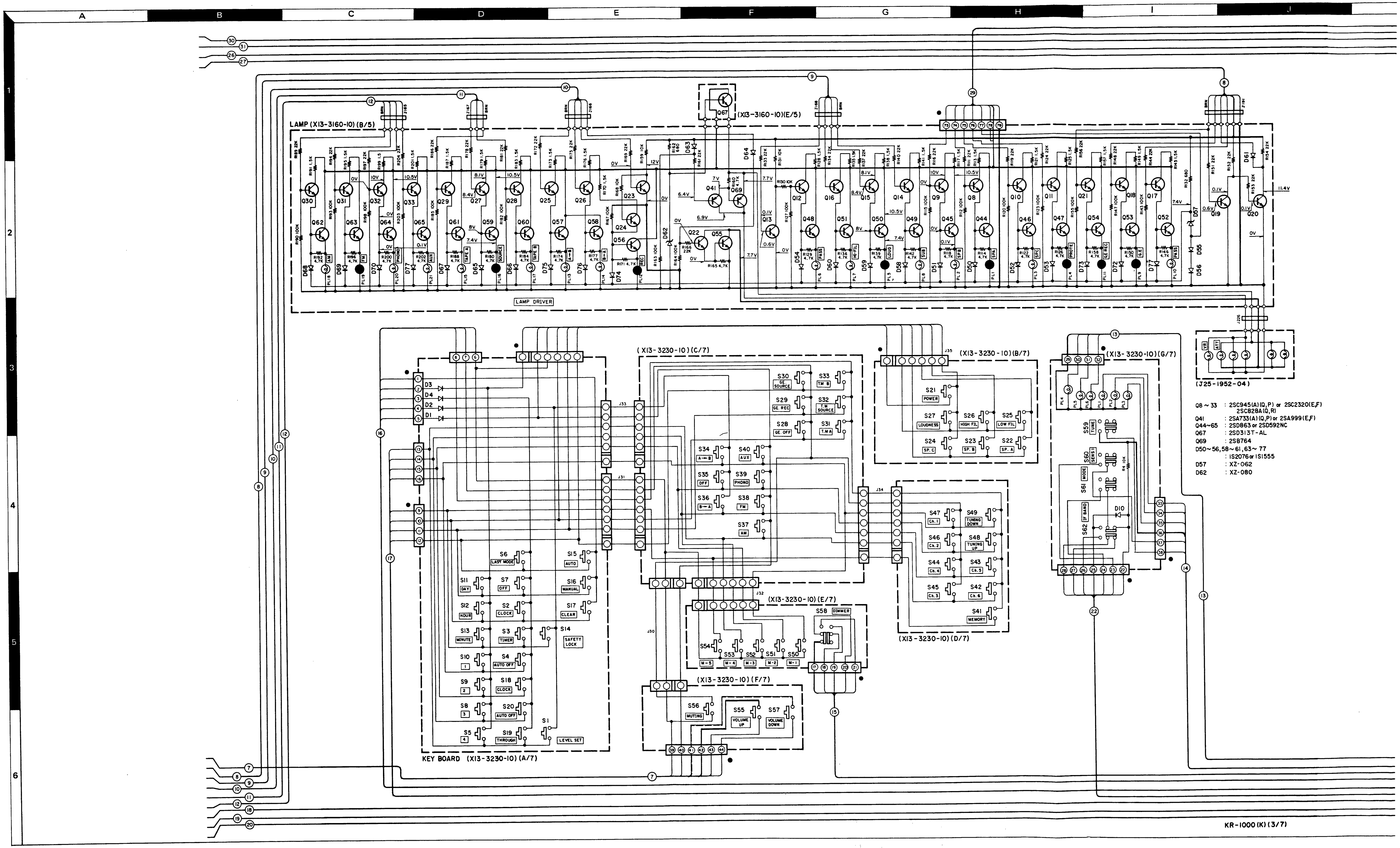
BUZZER (X13-4300-10) Component side view


BZ 1
IC1
Q1
Q2
Q3
Q4
Q5
Q6
Q7
TK-TC 94HB
X13-4300-10
J25-4202-03

SWITCH (X13-3160-10) Component side view


YKC437V-0
X13-3160-10

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

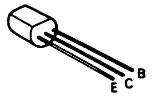

A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
LAMP (X13-3160-10) (B/5)
(X13-3160-10) (E/5)
Q67
LAMP DRIVER
(X13-3230-10) (C/7)
(X13-3230-10) (B/7)
(X13-3230-10) (G/7)
(X13-3230-10) (E/7)
(X13-3230-10) (D/7)
(X13-3230-10) (F/7)
KEY BOARD (X13-3230-10) (A/7)
(J25-1952-04)
11.4V
S1 LEVEL SET
S2 CLOCK
S3 TIMER
S4 AUTO OFF
S5 4
S6 LAST MODE
S7 OFF
S8 3
S9 2
S10 1
S11 DAY
S12 HOUR
S13 MINUTE
S14 SAFETY LOCK
S15 AUTO
S16 MANUAL
S17 CLEAR
S18 CLOCK
S19 THROUGH
S20 AUTO OFF
S21 POWER
S22 SP. A
S23 SP. B
S24 SP. C
S25 LOW FIL
S26 HIGH FIL
S27 LOUDNESS
S28 GE. OFF
S29 GE. REC
S30 GE. SOURCE
S31 T.M.A
S32 T.M SOURCE
S33 T.M. B
S34 A→B
S35 OFF
S36 B→A
S37 AM
S38 FM
S39 PHONO
S40 AUX
S41 MEMORY
S42 Ch. 6
S43 Ch. 5
S44 Ch. 4
S45 Ch. 3
S46 Ch. 2
S47 Ch. 1
S48 TUNING UP
S49 TUNING DOWN
S50 M-1
S51 M-2
S52 M-3
S53 M-4
S54 M-5
S55 VOLUME UP
S56 MUTING
S57 VOLUME DOWN
S58 DIMMER
S59 TUNE
S60 SERS
S61 MODE
S62 IF BAND
D10
J30
J31
J32
J33
J34
J35

Q8 ~ 33 : 2SC945(A)(Q,P) or 2SC2320(E,F)
2SC828A(Q,R)
Q41 : 2SA733(A)(Q,P) or 2SA999(E,F)
Q44~65 : 2SD863 or 2SD592NC
Q67 : 2SD313T-AL
Q69 : 2SB764
D50~56,58~61,63~ 77
: 1S2076 or 1S1555
D57 : XZ-062
D62 : XZ-080

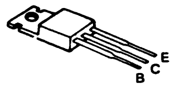
KR-1000 (K) (3/7)

2SA733 (A)
2SA999
2SB764
2SC828A
2SC945 (A)
2SC2320

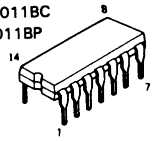
2SD592NC
2SD863

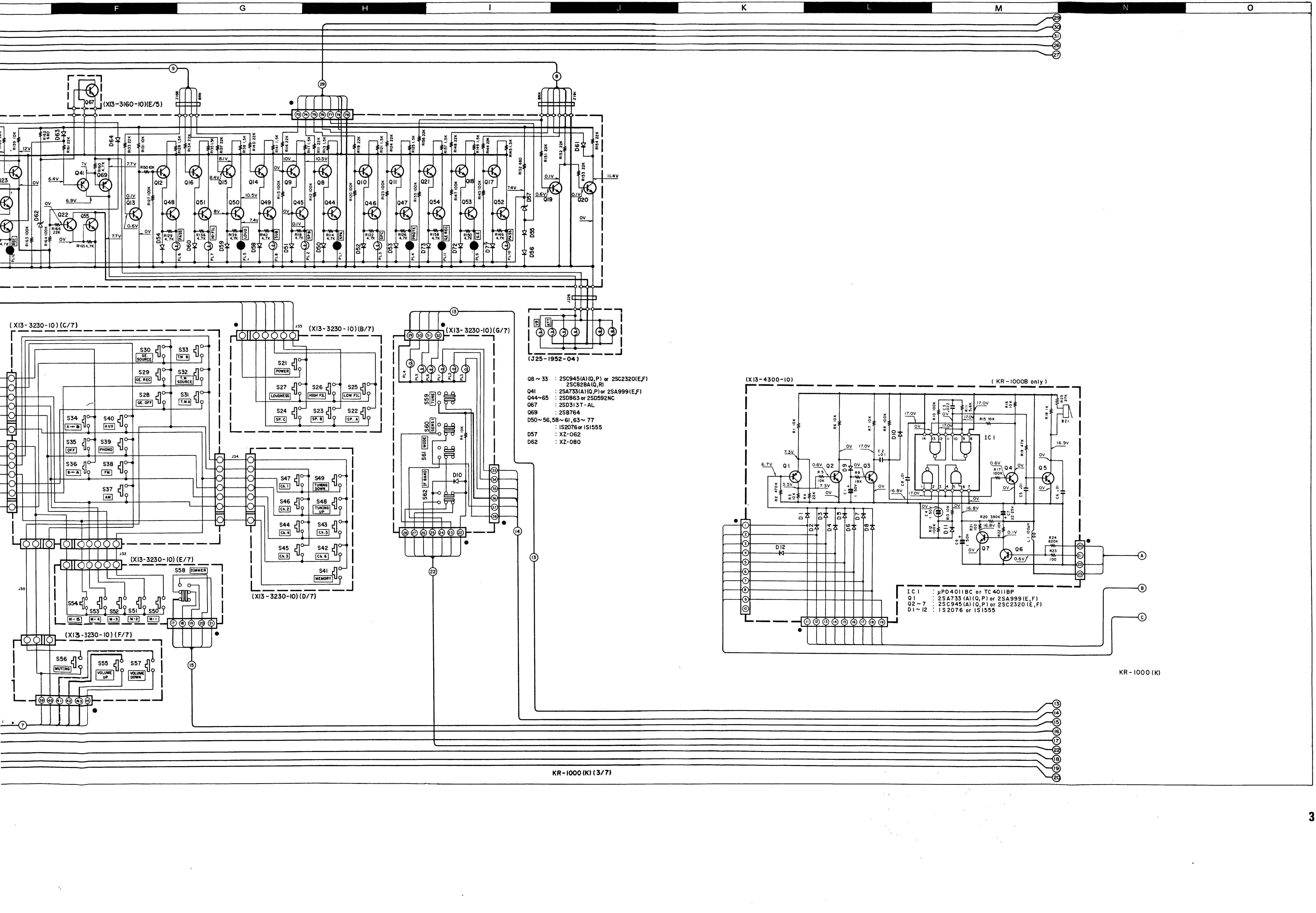


2SD313T



μPD4011BC
TC4011BP



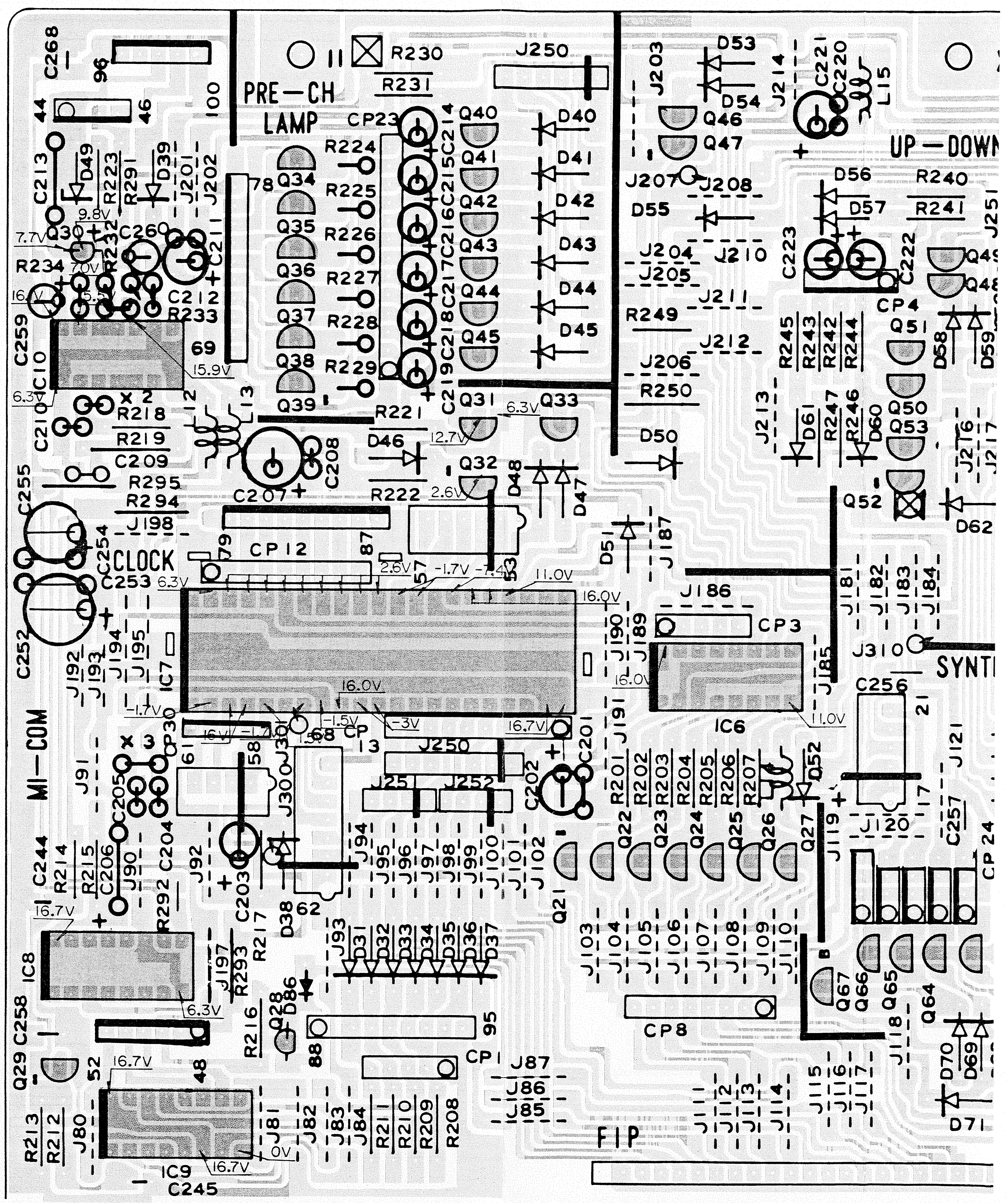

F
G
H
I
J
K
L
M
N
O
(X13-3160-10)(E/5)
(X13-3230-10)(C/7)
(X13-3230-10)(B/7)
(X13-3230-10)(G/7)
(J25-1952-04)
(X13-3230-10)(E/7)
(X13-3230-10)(D/7)
(X13-3230-10)(F/7)
(X13-4300-10)
(KR-1000B only)
S30 GE SOURCE
S33 T.M. B
S29 GE REC
S32 T.M. SOURCE
S28 GE OFF
S31 T.M.A
S34 A→B
S40 AUX
S35 OFF
S39 PHONO
S36 B→A
S38 FM
S37 AM
S21 POWER
S27 LOUDNESS
S26 HIGH FIL
S25 LOW FIL
S24 SP. C
S23 SP. B
S22 SP. A
S59 TUNE
S60 MODE SENSE
S61
S62 IF BAND
S47 Ch.1
S49 TUNING DOWN
S46 Ch.2
S48 TUNING UP
S44 Ch.4
S43 Ch.5
S45 Ch.3
S42 Ch.6
S41 MEMORY
S58 DIMMER
S54 M-5
S53 M-4
S52 M-3
S51 M-2
S50 M-1
S56 MUTING
S55 VOLUME UP
S57 VOLUME DOWN
IC1
BZ1
KR-1000(K)
KR-1000(K)(3/7)

Q8 ~ 33 : 2SC945(A)(Q,P) or 2SC2320(E,F)
2SC828A(Q,R)
Q41 : 2SA733(A)(Q,P) or 2SA999(E,F)
Q44~65 : 2SD863 or 2SD592NC
Q67 : 2SD313T-AL
Q69 : 2SB764
D50~56,58~61,63~77
: 1S2076 or 1S1555
D57 : XZ-062
D62 : XZ-080

IC1 : μPD4011BC or TC4011BP
Q1 : 2SA733(A)(Q,P) or 2SA999(E,F)
Q2 ~ 7 : 2SC945(A)(Q,P) or 2SC2320(E,F)
D1 ~ 12 : 1S2076 or 1S1555

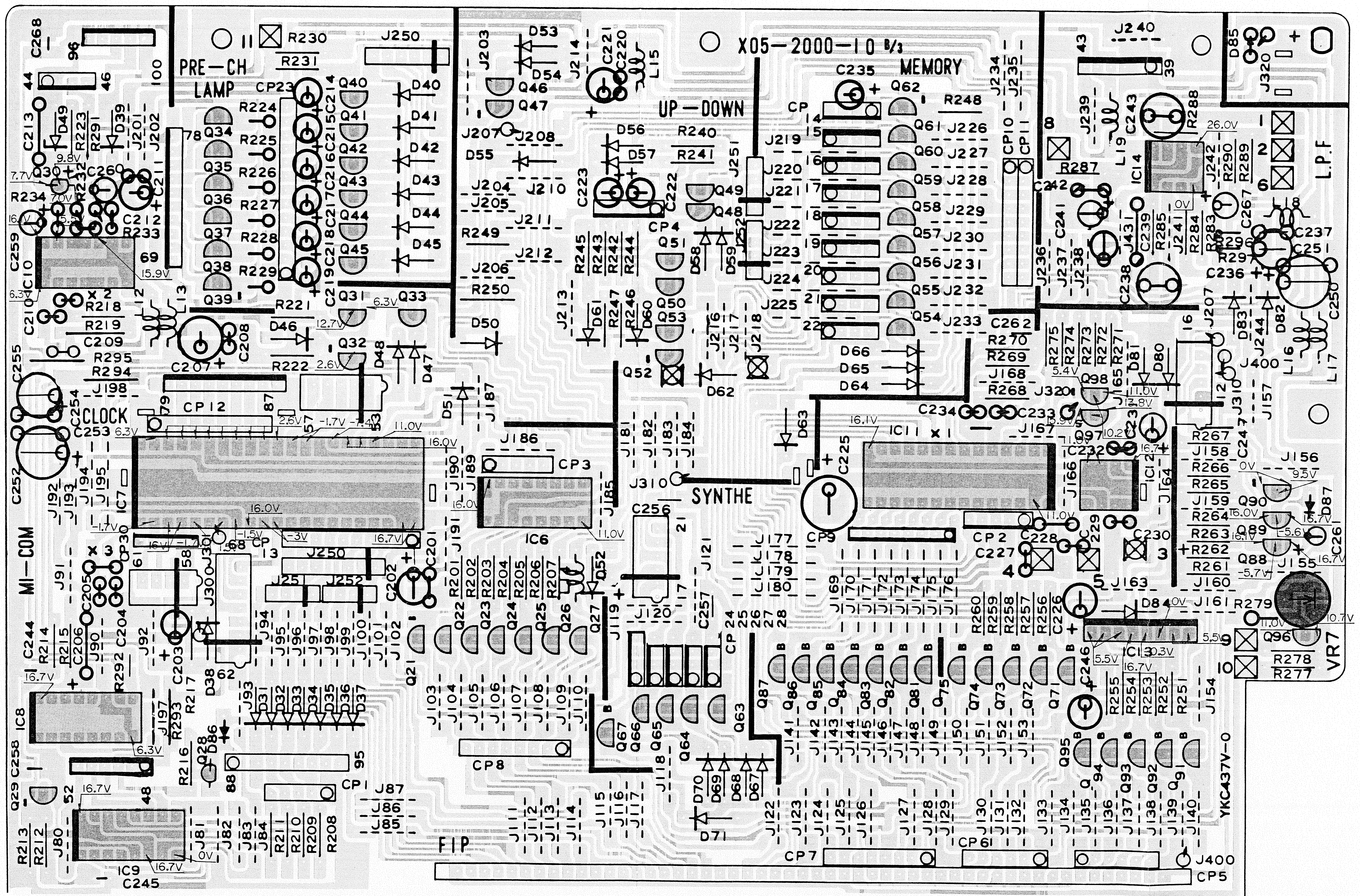
PC BOARD

TUNER (X05-2000-10) Component side view


PRE—CH LAMP
R230
R231
J250
CP23
Q34
Q35
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q44
Q45
D40
D41
D42
D43
D44
D45
R224
R225
R226
R227
R228
R229
R221
R222
D46
D47
D48
Q31
Q32
Q33
D53
D54
Q46
Q47
J203
J214
C221
C220
L15
UP—DOWN
R240
R241
D56
D57
J207
J208
D55
J204
J205
J210
J211
J206
J212
R249
R250
D50
C223
C222
R245
R243
R242
R244
CP4
Q51
Q50
Q53
Q52
D58
D59
D60
D61
D62
R247
R246
J213
C268
C213
D49
R223
R291
D39
J201
J202
C211
C212
R233
R234
R232
Q30
C260
C259
C10
C210
R218
R219
C209
R295
R294
J198
C208
C207
L13
CP12
C255
C254
C253
C252
CLOCK
J192
J193
J194
J195
IC7
16.0V
CP30
J91
C205
C206
C204
R214
R215
C244
J90
R292
J92
C203
J300
J301
J250
J251
J252
C202
C201
J94
J95
J96
J97
J98
J99
J100
J101
J102
MI—COM
IC8
C258
Q29
R213
R212
J80
IC9
C245
J81
J82
J83
J84
R211
R210
R209
R208
J197
R293
R217
D38
J93
D31
D32
D33
D34
D35
D36
D37
D86
Q28
R216
CP1
J87
J86
J85
FIP
D51
J187
J186
CP3
J181
J182
J183
J184
J185
J310
SYNT
C256
J121
J190
J189
J191
IC6
R201
R202
R203
R204
R205
R206
R207
D52
Q21
Q22
Q23
Q24
Q25
Q26
Q27
J119
J120
C257
CP24
J103
J104
J105
J106
J107
J108
J109
J110
CP8
Q67
Q66
Q65
Q64
J118
J111
J112
J113
J114
J115
J116
J117
D70
D69
D71
7.7V
9.8V
7.0V
16.7V
15.9V
6.3V
12.7V
2.6V
-1.7V
-7.4V
11.0V
16.0V
-1.5V
-3V
0V

PC BOARD

TUNER (X05-2000-10) Component side view


X05-2000-10 B/3
PRE-CH LAMP
UP-DOWN
MEMORY
L.P.F
CLOCK
MI-COM
SYNTHE
FIP
YKC437V-0
IC6
IC7
IC8
IC9
IC11
IC12
IC13
IC14
VR7
CP1
CP2
CP3
CP4
CP5
CP6
CP7
CP8
CP9
CP10
CP11
CP12
J250
J240
J400

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

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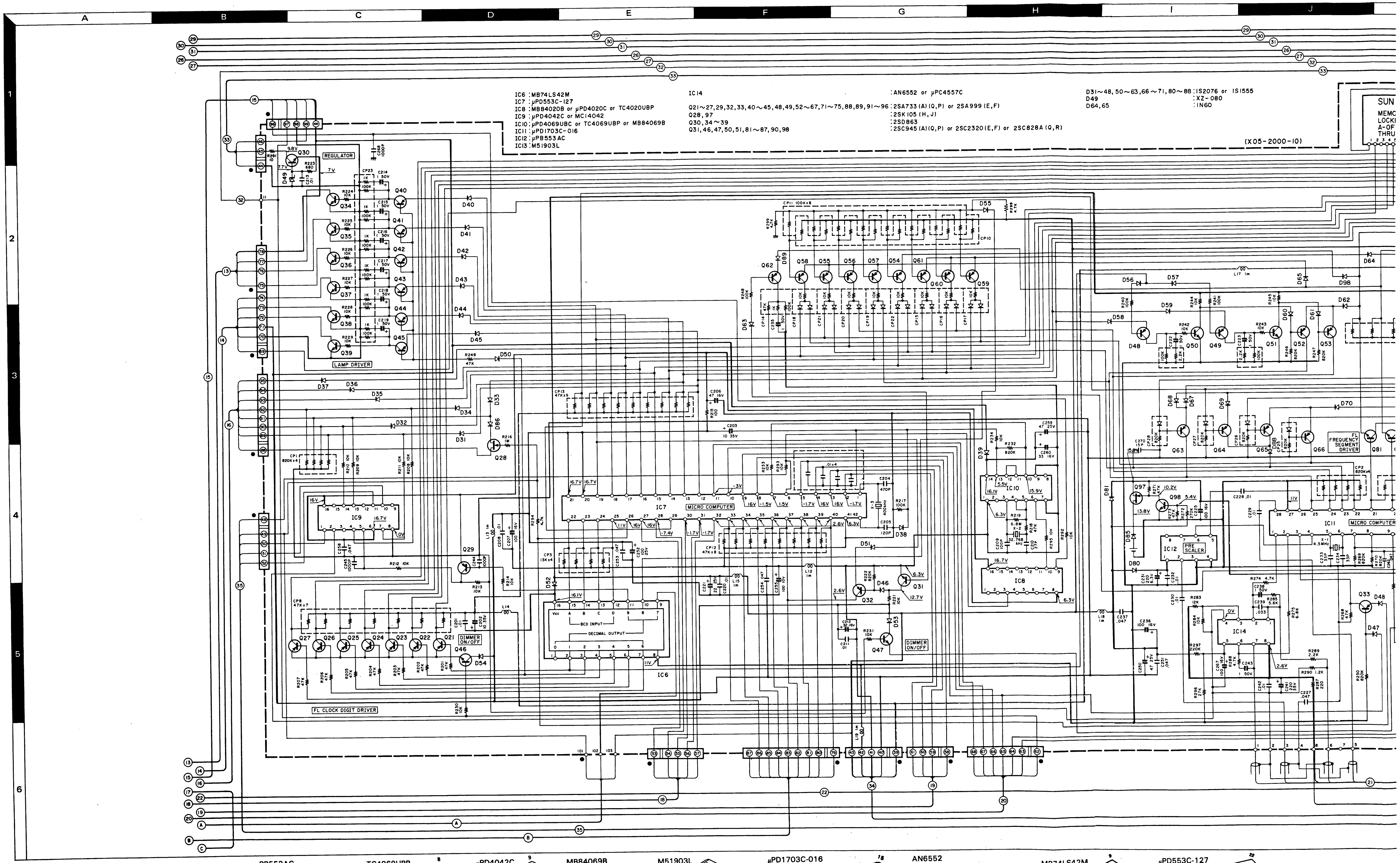
AM-FM STEREO RECEIVER


IC6 :MB74LS42M
IC7 :µPD553C-127
IC8 :MB84020B or µPD4020C or TC4020UBP
IC9 :µPD4042C or MC14042
IC10:µPD4069UBC or TC4069UBP or MB84069B
IC11 :µPD1703C-016
IC12 :µPB553AC
IC13 :M51903L

IC14 :AN6552 or µPC4557C

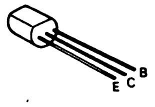
Q21~27,29,32,33,40~45,48,49,52~67,71~75,88,89,91~96 :2SA733(A)(Q,P) or 2SA999(E,F)
Q28,97 :2SK105(H,J)
Q30,34~39 :2SD863
Q31,46,47,50,51,81~87,90,98 :2SC945(A)(Q,P) or 2SC2320(E,F) or 2SC828A(Q,R)

D31~48,50~63,66~71,80~88 :IS2076 or IS1555
D49 :XZ-080
D64,65 :IN60

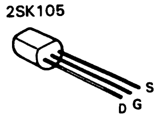
(X05-2000-10)

A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
REGULATOR
LAMP DRIVER
FL CLOCK DIGIT DRIVER
MICRO COMPUTER
BCD INPUT
DECIMAL OUTPUT
DIMMER ON/OFF
FL FREQUENCY SEGMENT DRIVER
PRE SCALER
SUN
MEMC
LOCKI
A-OF
THRU
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC14
Q21
Q22
Q23
Q24
Q25
Q26
Q27
Q28
Q29
Q30
Q31
Q32
Q33
Q34
Q35
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q44
Q45
Q46
Q47
Q48
Q49
Q50
Q51
Q52
Q53
Q54
Q55
Q56
Q57
Q58
Q59
Q60
Q61
Q62
Q63
Q64
Q65
Q66
Q81
Q97
Q98
D31
D32
D33
D34
D35
D36
D37
D38
D39
D40
D41
D42
D43
D44
D45
D46
D47
D48
D49
D50
D51
D52
D53
D54
D55
D56
D57
D58
D59
D60
D61
D62
D63
D64
D65
D66
D67
D68
D69
D70
D80
D81
D85
D86
D88
D89
D98
CP1 820K×4
CP2 820K×4
CP3 13K×4
CP8 47K×7
CP11 100K×8
CP12 47K×8
CP13 47K×9
L17 1m
L18 1m
L12 1m
L13 1m
L14
L15 1m
L19 1m
9.8V
7.7V
7V
16.7V
16V
16.1V
-1.5V
1.5V
-1.7V
-1.7V
-3V
-7.4V
11V
2.6V
5.3V
5.5V
15.9V
6.3V
12.7V
10.2V
5.4V
13.8V
0V
32.768 kHz
400kHz
4.5MHz

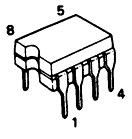
2SA733 (A)
2SA999
2SC828A
2SC945 (A)
2SC2320
2SD863



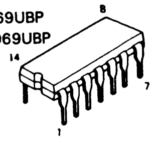
2SK105



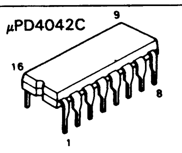
µPB553AC
µPC4557C



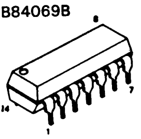
TC4069UBP
µPD4069UBP



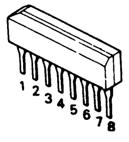
µPD4042C



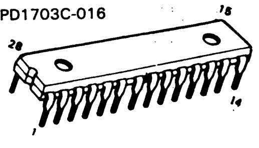
MB84069B



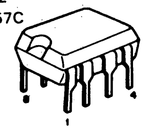
M51903L



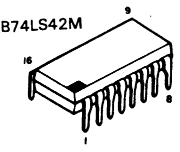
µPD1703C-016



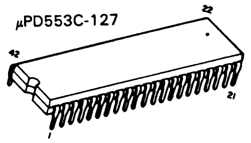
AN6552
µPC4557C



MB74LS42M



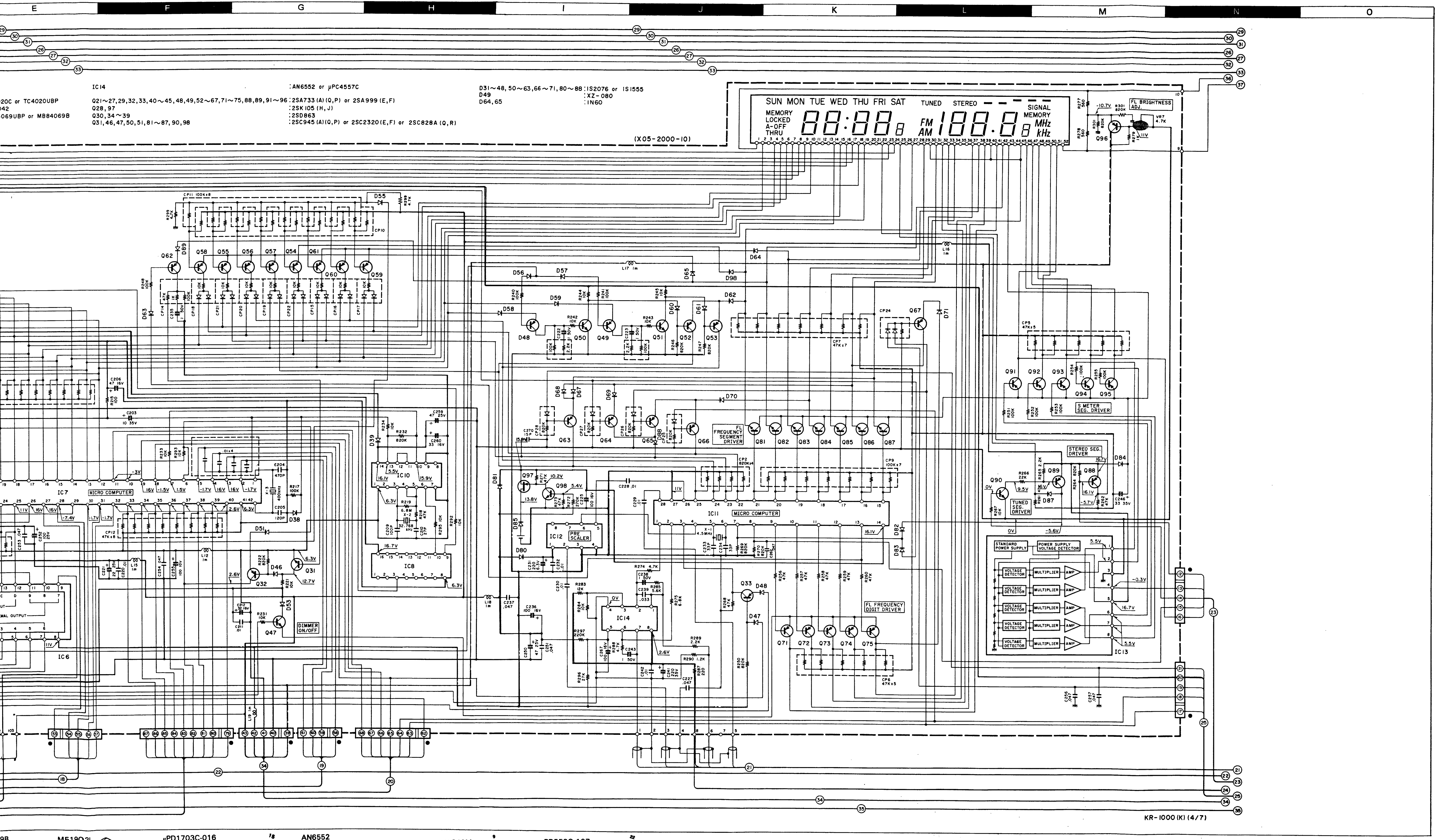
µPD553C-127

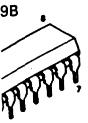


20C or TC4020UBP
042
069UBP or MB84069B

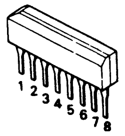
IC14 :AN6552 or µPC4557C
Q21~27,29,32,33,40~45,48,49,52~67,71~75,88,89,91~96 :2SA733(A)(Q,P) or 2SA999(E,F)
Q28,97 :2SK105(H,J)
Q30,34~39 :2SD863
Q31,46,47,50,51,81~87,90,98 :2SC945(A)(Q,P) or 2SC2320(E,F) or 2SC828A(Q,R)

D31~48,50~63,66~71,80~88 :IS2076 or IS1555
D49 :XZ-080
D64,65 :IN60

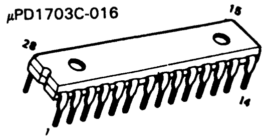

E
F
G
H
I
J
K
L
M
N
O
(X05-2000-10)
SUN MON TUE WED THU FRI SAT
TUNED
STEREO
MEMORY
LOCKED
A-OFF
THRU
88:88
FM
AM
188.8
SIGNAL
MEMORY
MHz
kHz
FL BRIGHTNESS ADJ.
VR7 4.7K
Q96
CP11 100K×8
CP10
D55
Q62
Q58
Q55
Q56
Q57
Q54
Q61
Q60
Q59
D89
D63
D56
D57
D58
D59
D60
D61
D62
D64
D65
D98
L16 1m
L17 1m
Q48
Q50
Q49
Q51
Q52
Q53
CP24
Q67
D71
CP7 47K×7
CP5 47K×5
Q91
Q92
Q93
Q94
Q95
S METER SEG. DRIVER
D68
D67
D69
D70
Q63
Q64
Q65
D88
Q66
FL FREQUENCY SEGMENT DRIVER
Q81
Q82
Q83
Q84
Q85
Q86
Q87
CP2 820K×4
CP9 100K×7
STEREO SEG. DRIVER
D84
Q90
Q89
Q88
D87
TUNED SEG. DRIVER
IC7
MICRO COMPUTER
CP12 47K×8
D51
D46
Q31
Q32
D53
Q47
DIMMER ON/OFF
IC6
IC10
IC8
D39
D81
Q97
Q98
D85
D80
IC12
PRE SCALER
IC11
MICRO COMPUTER
X-1 4.5MHz
X-2 32.768kHz
X-3 400kHz
D82
D83
IC14
Q33
D48
D47
FL FREQUENCY DIGIT DRIVER
Q71
Q72
Q73
Q74
Q75
CP6 47K×5
STANDARD POWER SUPPLY
POWER SUPPLY VOLTAGE DETECTOR
VOLTAGE DETECTOR
MULTIPLIER
AMP
IC13
L18 1m
L19 1m
L15 1m
L12 1m
KR-1000 (K) (4/7)



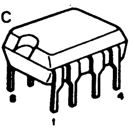
M51903L



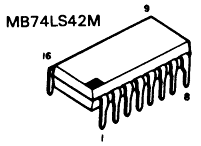
µPD1703C-016



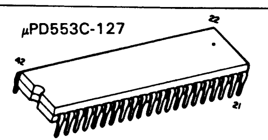
AN6552
µPC4557C



MB74LS42M

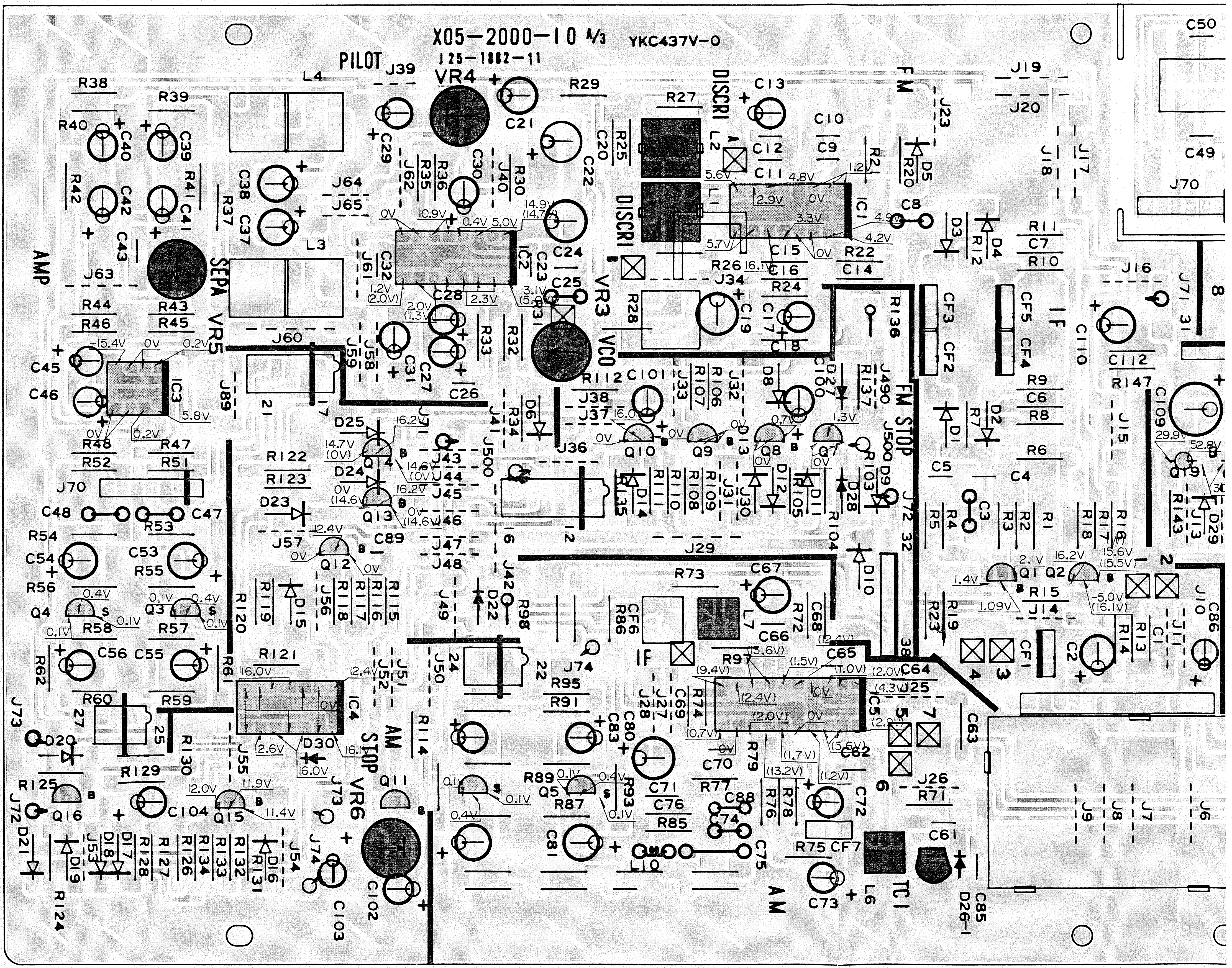


µPD553C-127

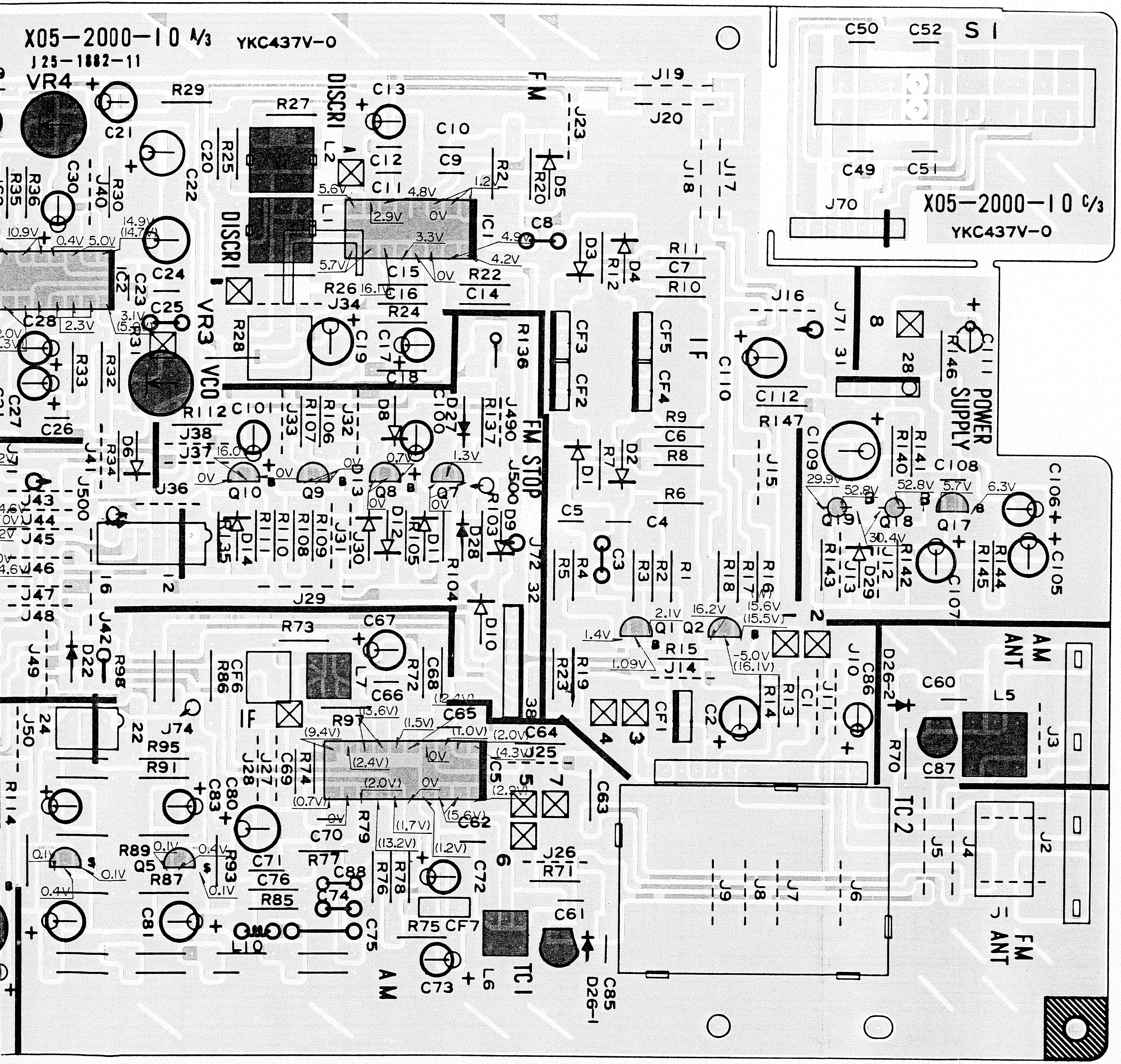


PC BOARD

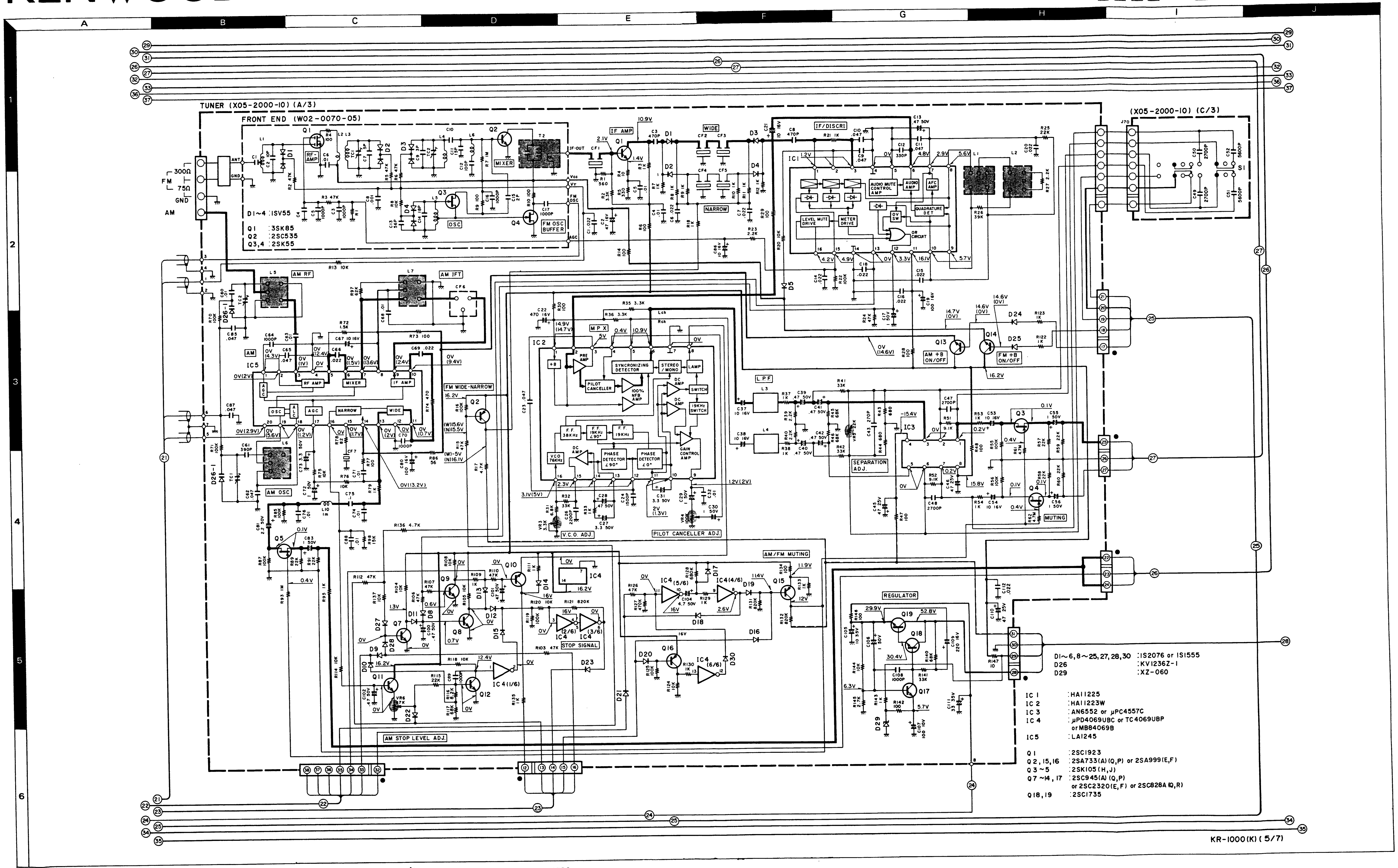
TUNER (X05-2000-10) Component side view


X05-2000-10 A/3
YKC437V-0
J25-1882-11
PILOT
VR4
DISCRI
FM
L4
L3
L2
L1
IC1
IC2
IC3
IC4
AMP
SEPA
VR5
VR3
VCO
FM STOP
IF
CF1
CF2
CF3
CF4
CF5
CF6
CF7
AM STOP
VR6
AM
TC1
L6
L7
L10
Q1
Q2
Q3
Q4
Q5
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q19
J29
J60
J70
C49
C50
R147
C112
C109
C85
D26-1

PC BOARD


X05-2000-10 A/3
J25-1882-11
YKC437V-0
X05-2000-10 C/3
YKC437V-0
VR4
VR3 VCO
DISCRI
FM
IF
FM STOP
POWER SUPPLY
AM ANT
FM ANT
AM
IC1
IC2
TC1
TC2
S1
L5
L6
L7
L10
CF1
CF2
CF3
CF4
CF5
CF6
CF7

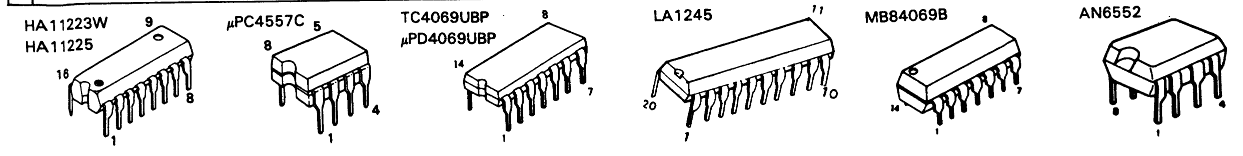
Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.


A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
TUNER (X05-2000-10) (A/3)
FRONT END (W02-0070-05)
(X05-2000-10) (C/3)
300Ω
FM
75Ω
GND
AM
RF-AMP
MIXER
OSC
FM OSC BUFFER
IF AMP
WIDE
NARROW
IF/DISCRI
AUDIO MUTE CONTROL AMP
AUDIO AMP
AFC AMP
QUADRATURE DET
LEVEL MUTE DRIVE
METER DRIVE
OR CIRCUIT
AM RF
AM IFT
AM OSC
RF AMP
IF AMP
AGC
FM WIDE-NARROW
MPX
PRE AMP
SYNCRONIZING DETECTOR
STEREO / MONO
LAMP
PILOT CANCELLER
100% NFB AMP
DC AMP
SWITCH
19KHz SWITCH
GAIN CONTROL AMP
PHASE DETECTOR ∠90°
PHASE DETECTOR ∠0°
VCO 76KHz
V.C.O. ADJ.
PILOT CANCELLER ADJ.
L.P.F
SEPARATION ADJ.
MUTING
AM +B ON/OFF
FM +B ON/OFF
AM/FM MUTING
REGULATOR
STOP SIGNAL
AM STOP LEVEL ADJ.
D1~4 :1SV55
Q1 :3SK85
Q2 :2SC535
Q3,4 :2SK55
KR-1000(K) (5/7)

D1~6,8~25,27,28,30 :1S2076 or 1S1555
D26 :KV1236Z-1
D29 :XZ-060

IC 1 :HA11225
IC 2 :HA11223W
IC 3 :AN6552 or μPC4557C
IC 4 :μPD4069UBC or TC4069UBP or MB84069B
IC5 :LA1245

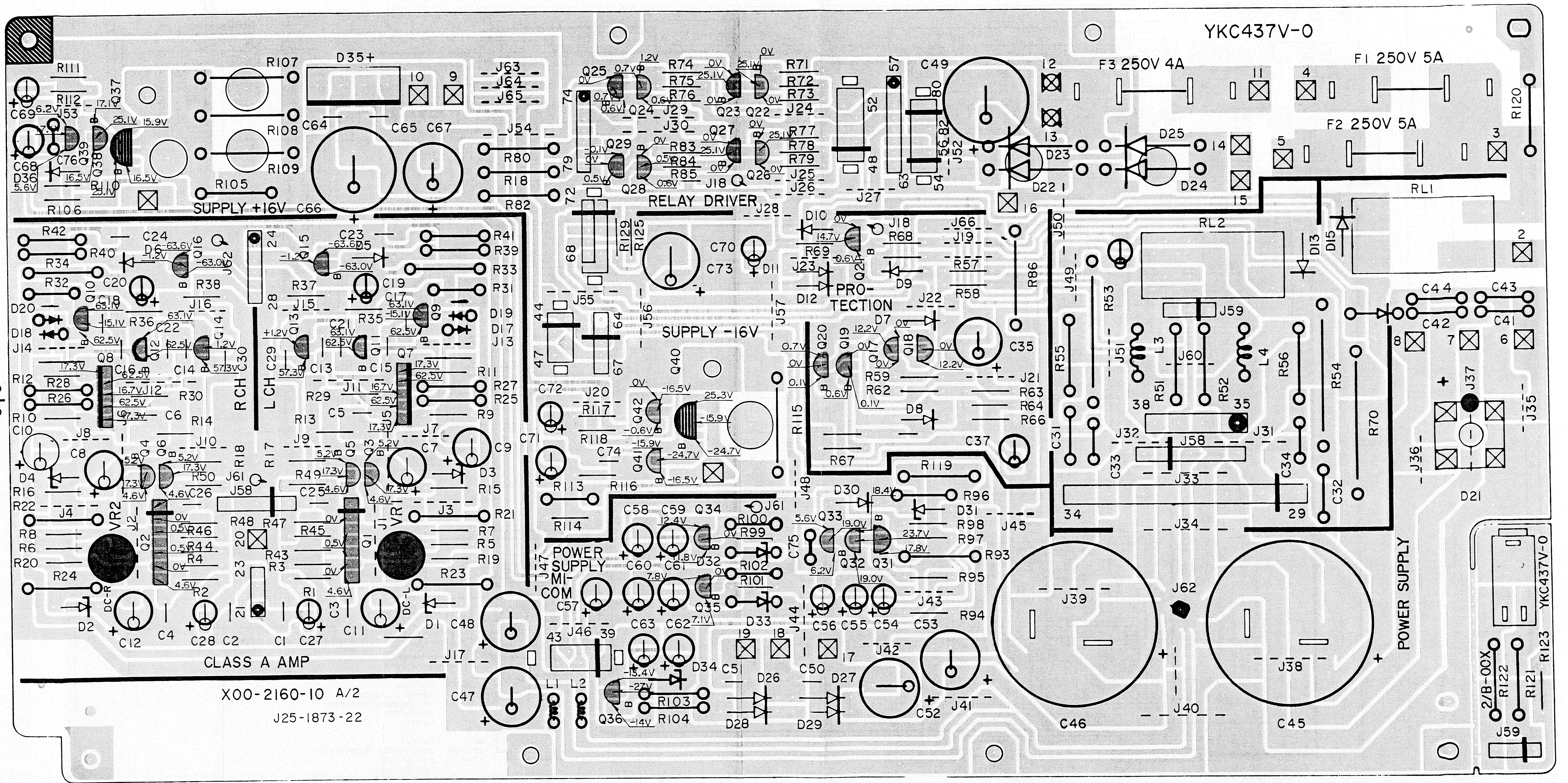
Q 1 :2SC1923
Q 2, 15, 16 :2SA733(A)(Q,P) or 2SA999(E,F)
Q 3~5 :2SK105(H,J)
Q 7~14, 17 :2SC945(A)(Q,P) or 2SC2320(E,F) or 2SC828A(Q,R)
Q18, 19 :2SC1735


HA11223W
HA11225
9
18
8
1
μPC4557C
5
8
4
1
TC4069UBP
μPD4069UBP
8
14
7
1
LA1245
11
20
10
1
MB84069B
8
14
7
1
AN6552
5
8
4
1

KR-1000/B KR-1000/B

PC BOARD

POWER SUPPLY (X00-2160-10) Foil side view



YKC437V-0
F3 250V 4A
F1 250V 5A
F2 250V 5A
SUPPLY +16V
RELAY DRIVER
PRO-TECTION
SUPPLY -16V
RCH
LCH
CLASS A AMP
POWER SUPPLY MI-COM
POWER SUPPLY
RL1
RL2
VR1
VR2
DC-R
DC-L
C45
C46
C47
C49
C64
C65 C67
J39
J38
J62
2/B-00X
YKC437V-0
X00-2160-10 A/2
J25-1873-22

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

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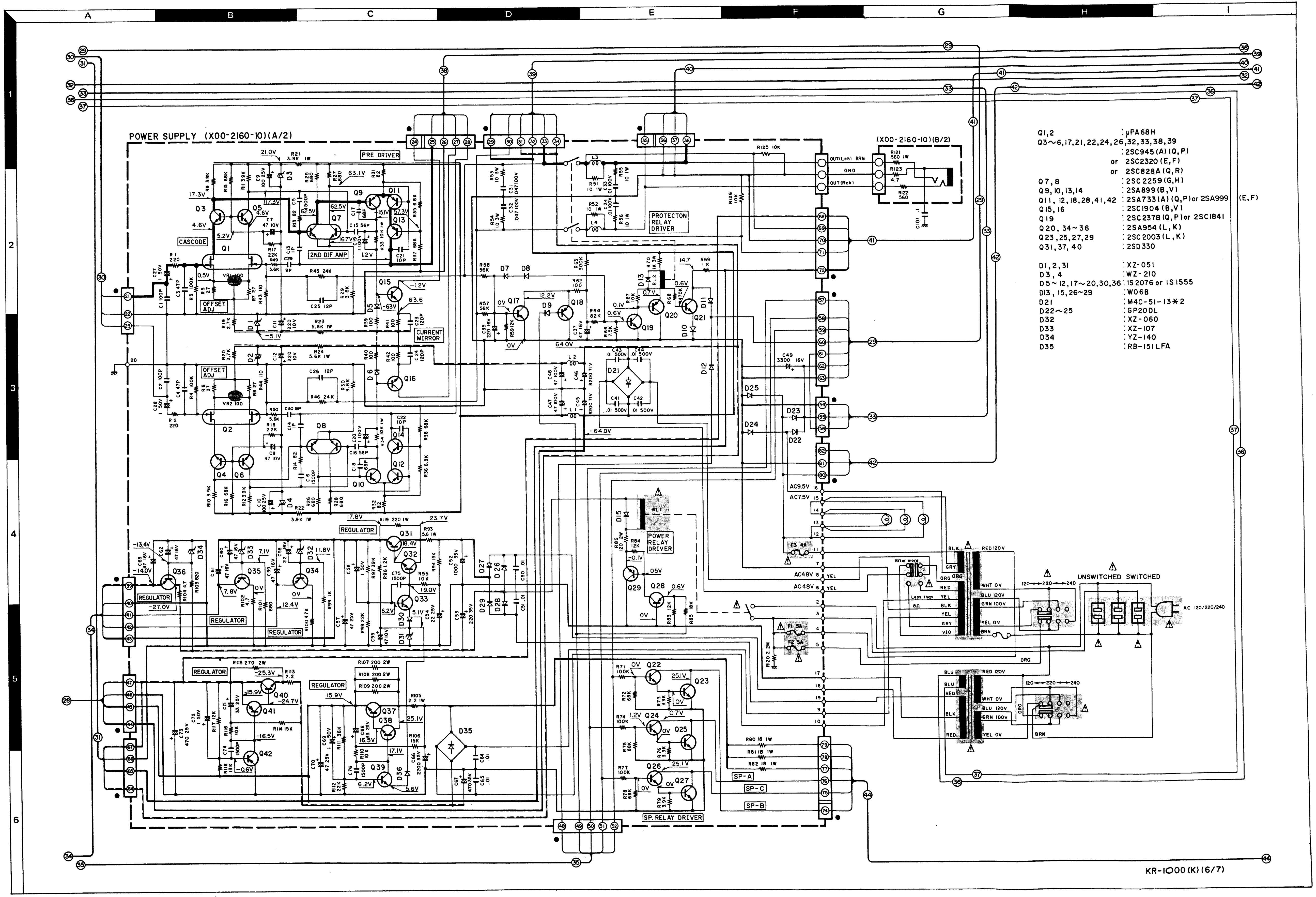
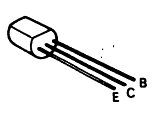
AM-FM STEREO RECEIVER

KR-1000/B

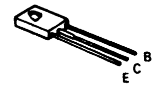

A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
POWER SUPPLY (X00-2160-10)(A/2)
PRE DRIVER
CASCODE
2ND DIF.AMP
OFFSET ADJ
CURRENT MIRROR
PROTECTON RELAY DRIVER
POWER RELAY DRIVER
REGULATOR
SP.RELAY DRIVER
SP-A
SP-C
SP-B
(X00-2160-10)(B/2)
OUT(Lch) BRN
GND
OUT(Rch)
AC9.5V
AC7.5V
AC48V
F3 4A
F1 5A
F2 5A
UNSWITCHED SWITCHED
AC 120/220/240
KR-1000(K)(6/7)

Q1,2	: μPA68H
Q3～6,17,21,22,24,26,32,33,38,39	: 2SC945(A)(Q,P)
	or 2SC2320(E,F)
	or 2SC828A(Q,R)
Q7,8	: 2SC2259(G,H)
Q9,10,13,14	: 2SA899(B,V)
Q11,12,18,28,41,42	: 2SA733(A)(Q,P)or 2SA999 (E,F)
Q15,16	: 2SC1904(B,V)
Q19	: 2SC2378(Q,P)or 2SC1841
Q20,34～36	: 2SA954(L,K)
Q23,25,27,29	: 2SC2003(L,K)
Q31,37,40	: 2SD330
D1,2,31	: XZ-051
D3,4	: WZ-210
D5～12,17～20,30,36	: 1S2076 or 1S1555
D13,15,26～29	: W06B
D21	: M4C-51-13✱2
D22～25	: GP20DL
D32	: XZ-060
D33	: XZ-107
D34	: YZ-140
D35	: RB-151LFA

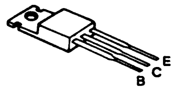
2SA733 (A) 2SC2003
2SA954 2SC2320
2SA999 2SC2378
2SC828A
2SC945 (A)
2SC1841



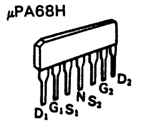
2SA899
2SC1904



2SD330

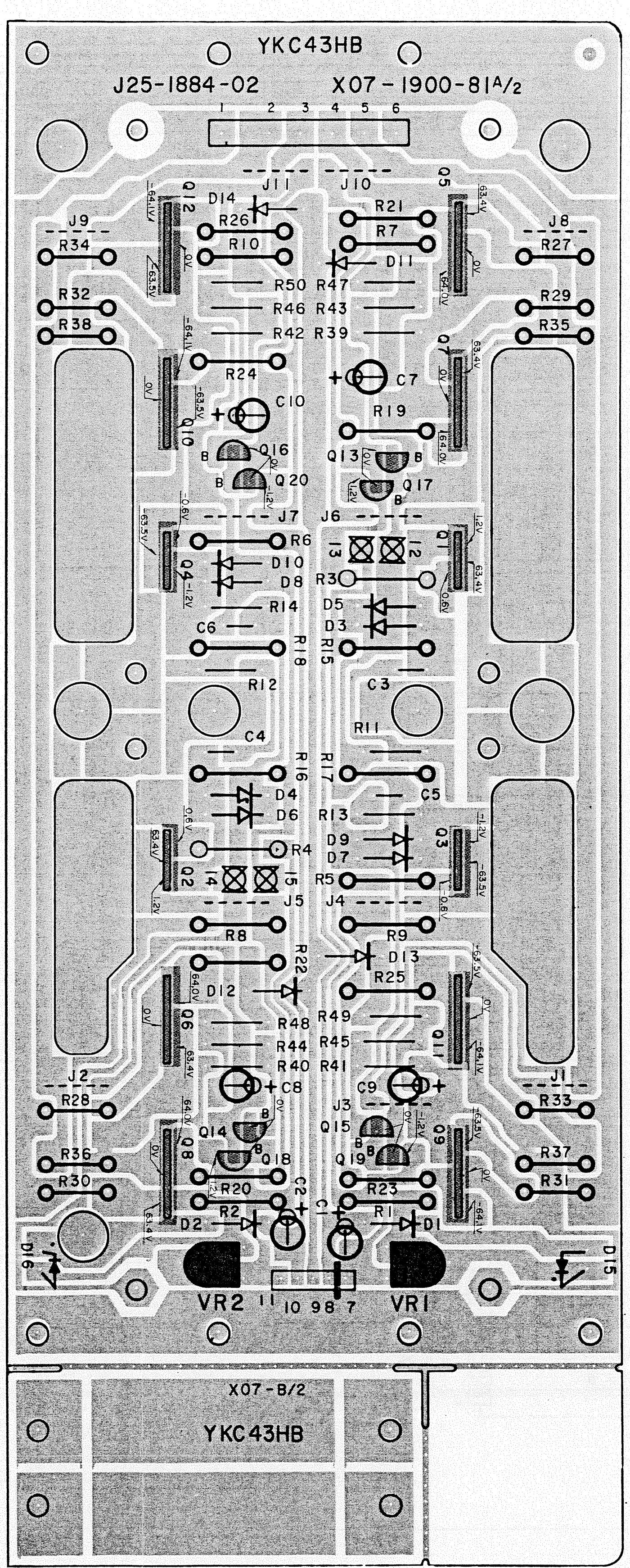


μPA68H

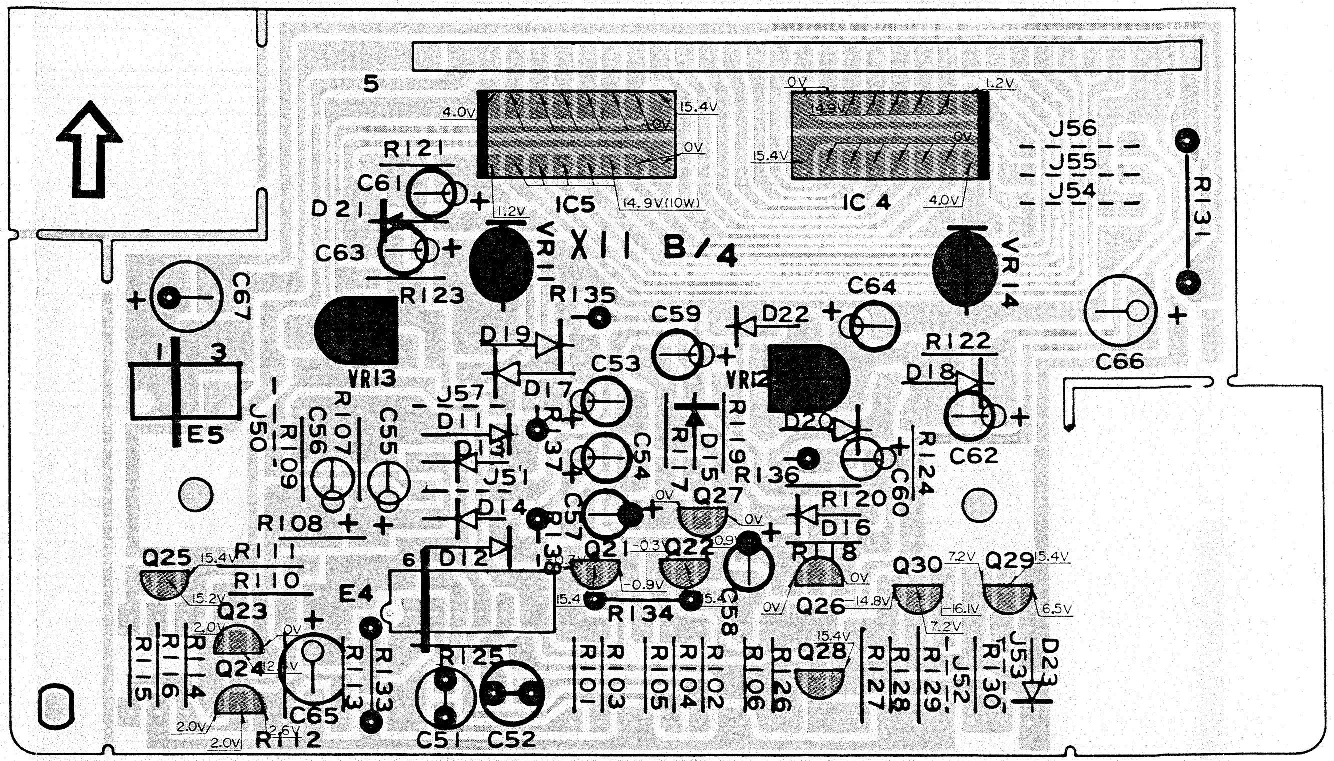

D1
G1
S1
N
S2
G2
D2

PC BOARD

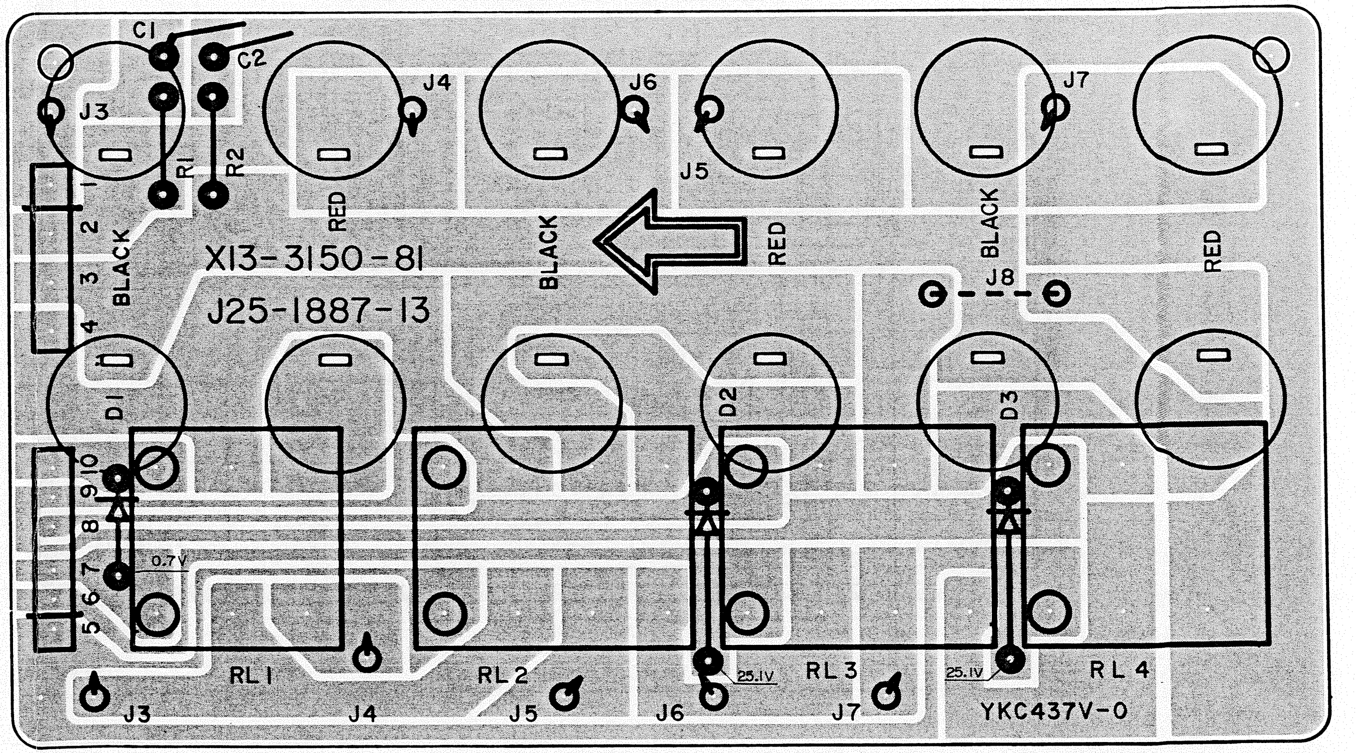
MAIN AMP (X07-1900-10) Foil side view


YKC43HB
J25-1884-02
X07-1900-81A/2
1 2 3 4 5 6
J11 J10 J9 J8 J7 J6 J5 J4 J3 J2 J1
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30 R31 R32 R33 R34 R35 R36 R37 R38 R39 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10
VR1 VR2
11 10 9 8 7
X07-B/2
YKC43HB

TONE AMP (X11-1670-10) Component side view


5
3
IC5 IC4
X11 B/4
VR11 VR12 VR13 VR14
J50 J51 J52 J53 J54 J55 J56 J57
E4 E5
Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30
D11 D12 D14 D15 D16 D17 D18 D19 D20 D21 D22 D23
R101 R102 R103 R104 R105 R106 R107 R108 R109 R110 R111 R112 R113 R114 R115 R116 R117 R118 R119 R120 R121 R122 R123 R124 R125 R126 R127 R128 R129 R130 R131 R133 R134 R135 R136 R137 R138
C51 C52 C53 C54 C55 C56 C57 C58 C59 C60 C61 C62 C63 C64 C65 C66 C67
4.0V 15.4V 0V 14.9V(10W) 1.2V 14.9V 4.0V
7.2V 15.4V 6.5V -16.1V -14.8V -0.9V 2.0V 2.6V 15.2V

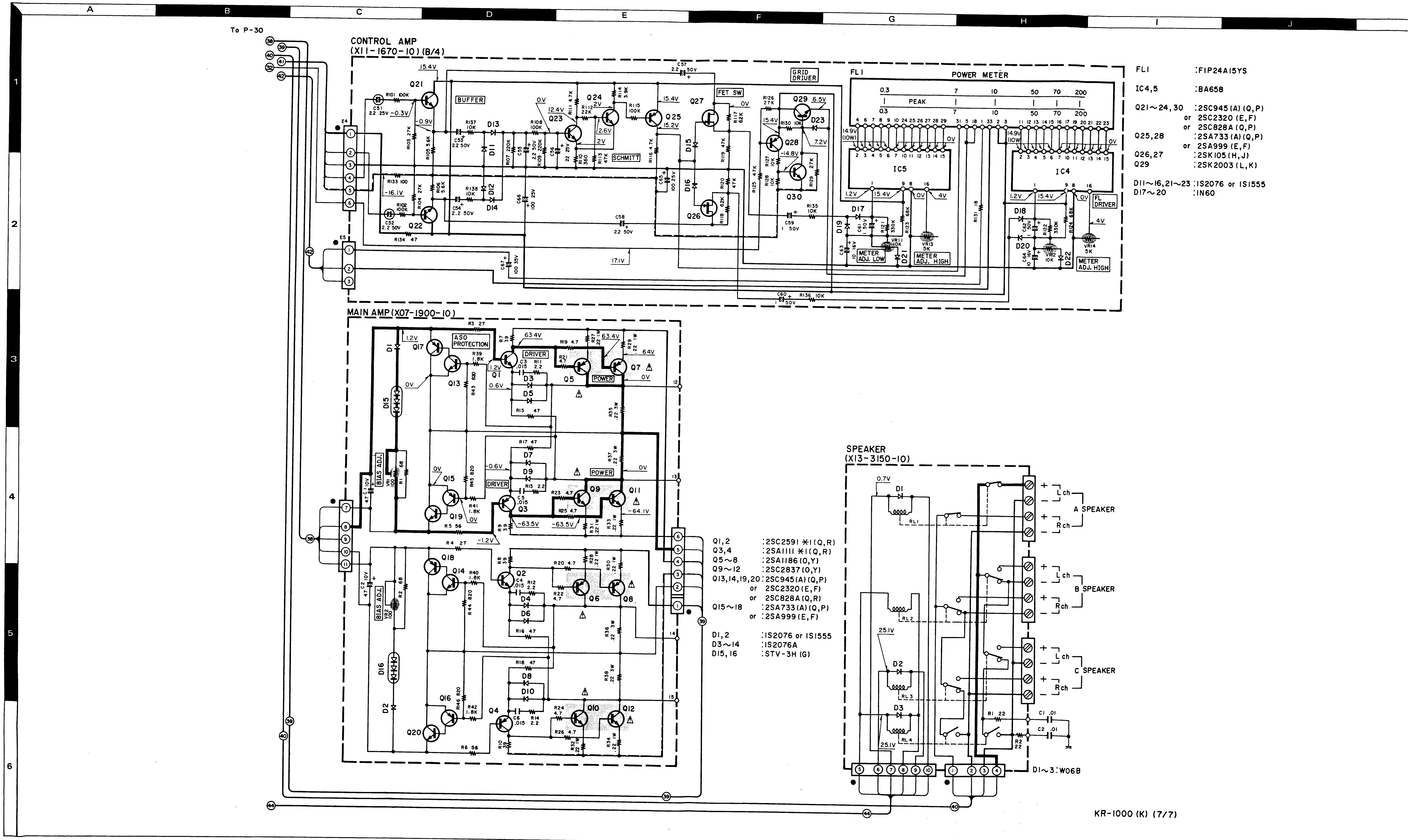
SPEAKER (X13-3150-10) Foil side view


C1 C2
R1 R2
J3 J4 J5 J6 J7 J8
1 2 3 4
5 6 7 8 9 10
RED BLACK RED BLACK RED BLACK RED
X13-3150-81
J25-1887-13
D1 D2 D3
0.7V 25.1V 25.1V
RL1 RL2 RL3 RL4
YKC437V-0

Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

KENWOOD

AM-FM STEREO RECEIVER


A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
To P-30
CONTROL AMP
(X11-1670-10) (B/4)
BUFFER
SCHMITT
FET SW
GRID DRIVER
FL1
POWER METER
PEAK
0.3
7
10
50
70
200
IC5
IC4
METER ADJ. LOW
METER ADJ. HIGH
FL DRIVER
E4
E5
Q21
Q22
Q23
Q24
Q25
Q26
Q27
Q28
Q29
Q30
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
VR11 10K
VR12 10K
VR13 5K
VR14 5K
MAIN AMP (X07-1900-10)
ASO PROTECTION
DRIVER
POWER
BIAS ADJ.
VR1 100
VR2 100
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
D1
D2
D15
D16
63.4V
64V
-63.5V
-64.1V
SPEAKER
(X13-3150-10)
RL1
RL2
RL3
RL4
A SPEAKER
B SPEAKER
C SPEAKER
Lch
Rch
D1~3 : W06B

FL1 :FIP24A15YS

IC4,5 :BA658

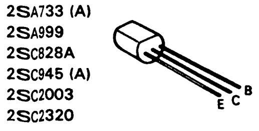
Q21~24,30 :2SC945 (A) (Q,P)
or 2SC2320 (E,F)
or 2SC828A (Q,P)
Q25,28 :2SA733 (A) (Q,P)
or 2SA999 (E,F)
Q26,27 :2SK105 (H,J)
Q29 :2SK2003 (L,K)

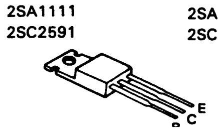
D11~16,21~23 :IS2076 or IS1555
D17~20 :IN60

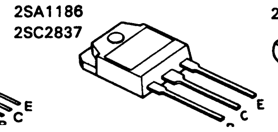
Q1,2 :2SC2591 ✱1 (Q,R)
Q3,4 :2SA1111 ✱1 (Q,R)
Q5~8 :2SA1186 (O,Y)
Q9~12 :2SC2837 (O,Y)
Q13,14,19,20 :2SC945 (A) (Q,P)
or 2SC2320 (E,F)
or 2SC828A (Q,R)
Q15~18 :2SA733 (A) (Q,P)
or :2SA999 (E,F)

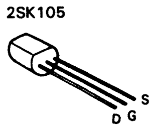
D1,2 :IS2076 or IS1555
D3~14 :IS2076A
D15,16 :STV-3H (G)

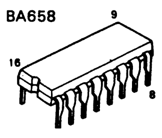
KR-1000 (K) (7/7)

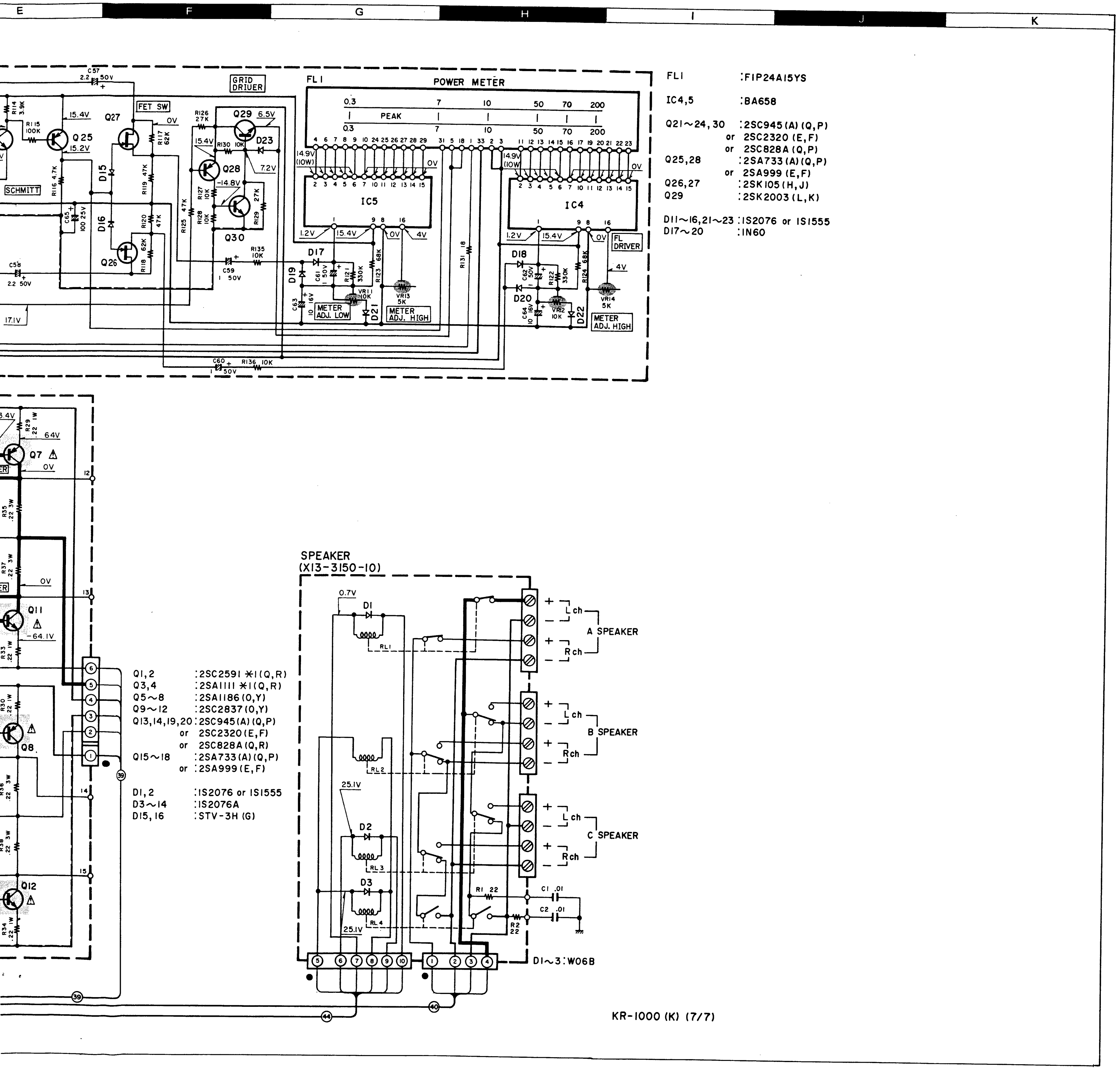

2SA733 (A)
2SA999
2SC828A
2SC945 (A)
2SC2003
2SC2320
E C B


2SA1111
2SC2591
E C


2SA1186
2SC2837
E C






E
F
G
H
I
J
K
GRID DRIVER
FET SW
SCHMITT
Q25
Q26
Q27
Q28
Q29
Q30
D15
D16
D17
D18
D19
D20
D21
D22
D23
FL1
POWER METER
0.3
PEAK
7
10
50
70
200
IC5
IC4
METER ADJ. LOW
METER ADJ. HIGH
FL DRIVER
FL1 :FIP24A15YS
IC4,5 :BA658
Q21~24, 30 :2SC945(A) (Q,P)
or 2SC2320 (E,F)
or 2SC828A (Q,P)
Q25,28 :2SA733(A)(Q,P)
or 2SA999 (E,F)
Q26,27 :2SK105(H,J)
Q29 :2SK2003(L,K)
D11~16,21~23 :1S2076 or 1S1555
D17~20 :1N60
Q7
Q8
Q11
Q12
SPEAKER (X13-3150-10)
D1
D2
D3
RL1
RL2
RL3
RL4
A SPEAKER
B SPEAKER
C SPEAKER
Lch
Rch
R1 22
R2 22
C1 .01
C2 .01
D1~3:W06B
Q1,2 :2SC2591 ✱1(Q,R)
Q3,4 :2SA1111 ✱1(Q,R)
Q5~8 :2SA1186(O,Y)
Q9~12 :2SC2837(O,Y)
Q13,14,19,20 :2SC945(A)(Q,P)
or 2SC2320(E,F)
or 2SC828A(Q,R)
Q15~18 :2SA733(A)(Q,P)
or :2SA999(E,F)
D1,2 :1S2076 or 1S1555
D3~14 :1S2076A
D15,16 :STV-3H (G)

KR-1000 (K) (7/7)

SPECIFICATIONS

AUDIO SECTION

Power Output

120 watts* per channel minimum RMS, both channel driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.01% total harmonic distortion.

Total Harmonic Distortion (20 Hz to 20,000 Hz from TAPE)	
rated power into 8 ohms	0.01%
1 watt power into 8 ohms	0.005%
Intermodulation Distortion (60 Hz : 7 kHz=4 : 1 SMPTE)	
rated power into 8 ohms	0.005%
Slew Rate	±150V/μsec
Rise Time	1.2 μsec
Damping Factor (at 1 kHz into 8 ohms)	75
Input Sensitivity/Impedance	
PHONO	2.5 mV/50k ohms
TAPE, AUX	150 mV/50k ohms
MIC	2.5 mV/50k ohms
Signal to Noise Ratio (A weighted)	
PHONO	82 dB for 2.5 mV input 88 dB for 5.0 mV input
TAPE, AUX	105 dB for 150 mV input
MIC	72 dB for 2.5 mV input
Maximum PHONO Input Level at 1,000 Hz	150 mV (rms, THD 0.03%
Frequency Response	
PHONO RIAA Standard Curve	20 Hz to 20,000 Hz ±0.3 dB
TAPE, AUX	3 Hz to 270,000 Hz −3 dB
Tone Control: 7-Band Multiple Acoustic Compensator	
60 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6 kHz and 15 kHz	±10 dB at each Frequency
Loudness Control (Vol. −30 dB)	+10 dB at 100 Hz
Subsonic Filter	18 Hz 6 dB/oct
High Filter	5 kHz 6 dB/oct
Output Level/Impedance	
TAPE REC Out (Pin)	150 mV/1k ohms
(DIN)	30 mV/80k ohms

*Measured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

FM TUNER SECTION

Usable Sensitivity	10.3 dBf (1.8 μV)
50 dB Quieting Sensitivity	
Mono	16.1 dBf (3.5 μV)
Stereo	35.6 dBf (35 μV)
Signal to Noise Ratio at 65 dBf	
Mono	76 dB
Stereo	70 dB
Total Harmonic Distortion at 1,000 Hz (wide)	
Mono	0.09%
Stereo	0.1%
Frequency Response	30 Hz to 15,000 Hz +0.5 dB −1.0 dB
Capture Ratio	1.0 dB
Image Rejection Ratio	80 dB (98 MHz)
Spurious Response Ratio	90 dB (98 MHz)
IF Response Ratio	100 dB (98 MHz)
Alternate Channel Selectivity	
WIDE	30 dB at ±300 kHz
NARROW	60 dB at ±300 kHz
AM Suppression Ratio	60 dB
Stereo Separation Ratio (wide)	
at 1,000 Hz	50 dB
at 50 Hz to 10,000 Hz	37 dB
Subcarrier Product Ratio	65 dB
Antenna Impedance	300 ohms balanced and 75 ohms unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM TUNER SECTION

Usable Sensitivity	14 μV
Signal to Noise Ratio	50 dB
Image Rejection	40 dB
Selectivity	45 dB

GENERAL

Power Consumption	700 watts at full power 120 watts at no signal 4.1 watts at power switch off
AC Outlets	Switched 2, Unswitched 1
Dimensions	W 550 mm (21-21/32") H 155 mm (6-3/32") D 443 mm (17-7/16")
Net Weight	16.2 kg (35.7 lb)
Gross Weight	18.5 kg (40.8 lb)

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
KR-1000/B						
36	1B	*	A01-0410-01	METALLIC CABINET		
37	3A	*	A20-1830-11	PANEL (KR-1000)	KMUH	
37	3A	*	A20-1830-11	PANEL (KR-1000)	UE	
37	3A	*	A20-3559-01	PANEL (KR-1000B)	KMU	
37	3A	*	A20-3559-01	PANEL (KR-1000B)	EUEB	
38	1B	*	A50-0093-22	SIDE PLATE (L)		
39	2D	*	A50-0094-22	SIDE PLATE (R)		
40	1A	*	A52-0040-02	TOP PLATE		
41	3A		B01-0191-03	PANEL ESCUTCHEON ASSY(KR1000)	KMUH	
41	3A		B01-0191-03	PANEL ESCUTCHEON ASSY(KR1000)	UE	
41	3A	*	B01-0232-03	PANEL ESCUTCHEON ASSY(KR1000B)	KMU	
41	3A	*	B01-0232-03	PANEL ESCUTCHEON ASSY(KR1000B)	EUEB	
42A	3B		B08-9026-04	MEMORY INDICATOR		
42B	2B		B10-0304-03	FRONT GLASS (KR-1000)	KMUH	
42B	2B		B10-0304-03	FRONT GLASS (KR-1000)	UE	
42B	2B	*	B10-0395-03	FRONT GLASS (KR-1000B)	KMU	
42B	2B	*	B10-0395-03	FRONT GLASS (KR-1000B)	EUEB	
43	3B		B10-0305-04	FRONT GLASS (KR-1000)	KMUH	
43	3B		B10-0305-04	FRONT GLASS (KR-1000)	UE	
43	3B	*	B10-0396-04	FRONT GLASS (KR-1000B)	KMU	
43	3B	*	B10-0396-04	FRONT GLASS (KR-1000B)	EUEB	
44	3F	*	B20-0503-03	SCALE		
45	3E	*	B20-0504-03	SCALE	KMUH	
45	3E	*	B20-0504-03	SCALE	UE	
45	3E	*	B20-0556-03	SCALE	KMU	
45	3E	*	B20-0556-03	SCALE	EUEB	
46	2F		B30-0150-05	LAMP (8V 0.3A)		
47	3G	*	B30-0339-05	LAMP (8V 0.15A) BLUE		
48	3G	*	B30-0340-05	LAMP (8V 0.15A) RED		
-			B46-0061-30	WARRANTY CARD	K	
-			B46-0062-30	WARRANTY CARD	UHUE	
-			B46-0063-23	WARRANTY CARD (FOR MILITARY)	UHUE	
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	UUEB	
-			B46-0095-03	WARRANTY CARD	UUEB	
-			B46-0098-03	WARRANTY CARD	E	
-		*	B50-3384-00	INSTRUCTION MANUAL (E)	K	
-		*	B50-3385-00	INSTRUCTION MANUAL (E)	MUHUE	
-		*	B50-4848-00	INSTRUCTION MANUAL (E)	KMU	
-		*	B50-4848-00	INSTRUCTION MANUAL (E)	EUEB	
-		*	B50-4849-00	INSTRUCTION MANUAL (F,G,SP)	MEUEB	
-			B59-0018-00	SERVICE DIRECTORY	UHUE	
-			B59-0092-00	SERVICE DIRECTORY	UUEB	
C001			CK45F1H473Z	CERAMIC 0.047UF Z		
C50			CE04W1H010M	ELECTRO 1UF 50WV		
49	3G	*	D13-0068-04	WORM GEAR		
50	3G		D15-0179-03	PULLEY		
51	3G	*	D15-0183-04	PULLEY		
52	3G	*	D15-0184-14	PULLEY		
53	3G	*	D15-0185-14	PULLEY		
54	3G	*	D16-0065-04	BELT	MUHUE	
54	3G	*	D16-0065-04	BELT	MUE	

E: Scandinavia & Europe H:Audio Club K: USA P: Canada ⚠ indicates safety critical components.
S: South Africa T: England U: PX(Far East, Hawaii)
UE : AAFES(Europe) X: Australia M: Other Areas K, M, U, E, UEB; KR-1000B

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54	3G	*	D16-0065-04	BELT	UEB	
54	3G	*	D16-0071-04	BELT	KK	
-		*	D13-0069-04	HERICAL GEAR(VOLUME)		
⚠ 55	1D		E03-0007-05	AC OUTLET		
⚠ 56	1D		E30-0181-05	AC POWER CORD	KK	
⚠ 56	1D		E30-0580-05	AC POWER CORD	E	
⚠ 56	1D		E30-0812-05	AC POWER CORD	MUHUE	
⚠ 56	1D		E30-0812-05	AC POWER CORD	MUUEB	
E1	3F		E11-0088-05	PHONE JACK (MIC)	KMUH	
E1	3F		E11-0088-05	PHONE JACK (MIC)	UE	
E1	3F	*	E11-0124-05	PHONE JACK (MIC)	KMU	
E1	3F	*	E11-0124-05	PHONE JACK (MIC)	EUEB	
57	3G		G01-0409-04	EXTENSION SPRING		
-		*	H01-3308-04	ITEM CARTON CASE	KMUH	
-		*	H01-3308-04	ITEM CARTON CASE	UE	
-		*	H01-4800-04	ITEM CARTON CASE	KMU	
-		*	H01-4800-04	ITEM CARTON CASE	EUEB	
-		*	H10-1582-01	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-1583-11	POLYSTYRENE FOAMED FIXTURE		
-			H20-0442-04	PROTECTION COVER	KUHUE	
-			H20-0442-04	PROTECTION COVER	KUE	
-			H20-0442-04	PROTECTION COVER	UEB	
-			H20-0443-04	PROTECTION COVER	MM	
-		*	H21-0219-04	PROTECTION SHEET		
-			H25-0078-04	PROTECTION BAG (235X315)		
58	3C		J02-0101-05	FOOT		
59	1D		J19-0626-12	ANTENNA HOLDER		
⚠ 60	1D		J42-0083-05	POWER CORD BUSHING		
61	3B		K27-0612-04	KNOB (MODE,IF BAND,TUNE,SENSI)	KMUH	
61	3B		K27-0612-04	KNOB (MODE,IF BAND,TUNE,SENSI)	UE	
61	3B	*	K27-1016-04	KNOB (BUTTON)	KMU	
61	3B	*	K27-1016-04	KNOB (BUTTON)	EUEB	
62	3A		K27-0613-04	KNOB (DIMMER)	KMUH	
62	3A		K27-0613-04	KNOB (DIMMER)	UE	
62	3A		K27-1017-04	KNOB (DIMMER)	KMU	
62	3A		K27-1017-04	KNOB (DIMMER)	EUEB	
63	3A		K27-0614-04	KNOB (MEMORY)	KMUH	
63	3A		K27-0614-04	KNOB (MEMORY)	UE	
63	3A		K27-1018-04	KNOB (MEMORY)	KMU	
63	3A		K27-1018-04	KNOB (MEMORY)	EUEB	
64	2B		K27-0615-04	KNOB (G.E.)	KMUH	
64	2B		K27-0615-04	KNOB (G.E.)	UE	
64	2B	*	K27-1019-04	KNOB (BUTTON) (G.E.)	KMU	
64	2B	*	K27-1019-04	KNOB (BUTTON) (G.E.)	EUEB	
65	2C	*	K29-0404-14	KNOB (BALANCE,MIXING)	KMUH	
65	2C	*	K29-0404-14	KNOB (BALANCE,MIXING)	UE	
65	2C	*	K29-1305-04	KNOB (BALANCE,MIXING)	KMU	
65	2C	*	K29-1305-04	KNOB (BALANCE,MIXING)	EUEB	
66	2B	*	K29-0405-14	KNOB (PRESET)	KMUH	
66	2B	*	K29-0405-14	KNOB (PRESET)	UE	
66	2B	*	K29-1394-04	KNOB (PRESET)	KMU	
66	2B	*	K29-1394-04	KNOB (PRESET)	EUEB	
67	3B	*	K29-0406-13	KNOB ASSY (VOLUME)	KMUH	

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UE : AAFES(Europe) X: Australia M: Other Areas K, M, U, E, UEB; KR-1000B

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54	3G	*	D16-0065-04	BELT	UEB	
54	3G	*	D16-0071-04	BELT	KK	
-		*	D13-0069-04	HERICAL GEAR(VOLUME)		
⚠ 55	1D		E03-0007-05	AC OUTLET		
⚠ 56	1D		E30-0181-05	AC POWER CORD	KK	
⚠ 56	1D		E30-0580-05	AC POWER CORD	E	
⚠ 56	1D		E30-0812-05	AC POWER CORD	MUH[UE]	
⚠ 56	1D		E30-0812-05	AC POWER CORD	MUUEB	
E1	3F		E11-0088-05	PHONE JACK (MIC)	KMUH	
E1	3F		E11-0088-05	PHONE JACK (MIC)	[UE]	
E1	3F	*	E11-0124-05	PHONE JACK (MIC)	KMU	
E1	3F	*	E11-0124-05	PHONE JACK (MIC)	EUEB	
57	3G		G01-0409-04	EXTENSION SPRING		
-		*	H01-3308-04	ITEM CARTON CASE	KMUH	
-		*	H01-3308-04	ITEM CARTON CASE	[UE]	
-		*	H01-4800-04	ITEM CARTON CASE	KMU	
-		*	H01-4800-04	ITEM CARTON CASE	EUEB	
-		*	H10-1582-01	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-1583-11	POLYSTYRENE FOAMED FIXTURE		
-			H20-0442-04	PROTECTION COVER	KUH[UE]	
-			H20-0442-04	PROTECTION COVER	KUE	
-			H20-0442-04	PROTECTION COVER	UEB	
-			H20-0443-04	PROTECTION COVER	MM	
-		*	H21-0219-04	PROTECTION SHEET		
-			H25-0078-04	PROTECTION BAG (235X315)		
58	3C		J02-0101-05	FOOT		
59	1D		J19-0626-12	ANTENNA HOLDER		
⚠ 60	1D		J42-0083-05	POWER CORD BUSHING		
61	3B		K27-0612-04	KNOB (MODE,IF BAND,TUNE,SENSI)	KMUH	
61	3B		K27-0612-04	KNOB (MODE,IF BAND,TUNE,SENSI)	[UE]	
61	3B	*	K27-1016-04	KNOB (BUTTON)	KMU	
61	3B	*	K27-1016-04	KNOB (BUTTON)	EUEB	
62	3A		K27-0613-04	KNOB (DIMMER)	KMUH	
62	3A		K27-0613-04	KNOB (DIMMER)	[UE]	
62	3A		K27-1017-04	KNOB (DIMMER)	KMU	
62	3A		K27-1017-04	KNOB (DIMMER)	EUEB	
63	3A		K27-0614-04	KNOB (MEMORY)	KMUH	
63	3A		K27-0614-04	KNOB (MEMORY)	[UE]	
63	3A		K27-1018-04	KNOB (MEMORY)	KMU	
63	3A		K27-1018-04	KNOB (MEMORY)	EUEB	
64	2B		K27-0615-04	KNOB (G. E.)	KMUH	
64	2B		K27-0615-04	KNOB (G. E.)	[UE]	
64	2B	*	K27-1019-04	KNOB (BUTTON) (G. E.)	KMU	
64	2B	*	K27-1019-04	KNOB (BUTTON) (G. E.)	EUEB	
65	2C	*	K29-0404-14	KNOB (BALANCE,MIXING)	KMUH	
65	2C	*	K29-0404-14	KNOB (BALANCE,MIXING)	[UE]	
65	2C	*	K29-1305-04	KNOB (BALANCE,MIXING)	KMU	
65	2C	*	K29-1305-04	KNOB (BALANCE,MIXING)	EUEB	
66	2B	*	K29-0405-14	KNOB (PRESET)	KMUH	
66	2B	*	K29-0405-14	KNOB (PRESET)	[UE]	
66	2B	*	K29-1394-04	KNOB (PRESET)	KMU	
66	2B	*	K29-1394-04	KNOB (PRESET)	EUEB	
67	3B	*	K29-0406-13	KNOB ASSY (VOLUME)	KMUH	

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67	3B	*	K29-0406-13	KNOB ASSY (VOLUME)	[UE]	
67	3B	*	K29-1306-03	KNOB ASSY (VOLUME)	KMU	
67	3B	*	K29-1306-03	KNOB ASSY (VOLUME)	EUEB	
68	3A		K29-0407-03	KNOB (TIMER)	KMUH	
68	3A		K29-0407-03	KNOB (TIMER)	[UE]	
68	3A		K29-1307-03	KNOB (TIMER)	KMU	
68	3A		K29-1307-03	KNOB (TIMER)	EUEB	
69	2A		K29-0408-03	KNOB ASSY (SPEAKER,FILTER)	KMUH	
69	2A		K29-0408-03	KNOB ASSY (SPEAKER,FILTER)	[UE]	
69	2A	*	K29-1308-03	KNOB ASSY (SPEAKER,FILTER)	KMU	
69	2A	*	K29-1308-03	KNOB ASSY (SPEAKER,FILTER)	EUEB	
70	3A		K29-0409-03	KNOB ASSY (INPUT,MONITOR,G. E)	KMUH	
70	3A		K29-0409-03	KNOB ASSY (INPUT,MONITOR,G. E)	[UE]	
70	3A	*	K29-1309-03	KNOB ASSY (INPUT,MONITOR,G. E)	KMU	
70	3A	*	K29-1309-03	KNOB ASSY (INPUT,MONITOR,G. E)	EUEB	
71	3B		K29-0410-12	KNOB ASSY (TUNER)	KMUH	
71	3B		K29-0410-12	KNOB ASSY (TUNER)	[UE]	
71	3B	*	K29-1310-02	KNOB ASSY (TUNER)	KMU	
71	3B	*	K29-1310-02	KNOB ASSY (TUNER)	EUEB	
⚠ 72	1F	*	L01-2436-15	POWER TRANSFORMER ASSY	KK	
⚠ 72	1F	*	L01-2437-25	POWER TRANSFORMER ASSY	MUH[UE]	
⚠ 72	1F	*	L01-2437-25	POWER TRANSFORMER ASSY	MUE	
⚠ 72	1F	*	L01-2437-25	POWER TRANSFORMER ASSY	UEB	
⚠ 73	1F	*	L01-2446-05	POWER TRANSFORMER ASSY	KK	
⚠ 73	1F	*	L01-2447-05	POWER TRANSFORMER ASSY	MUH[UE]	
⚠ 73	1F	*	L01-2447-05	POWER TRANSFORMER ASSY	MUE	
⚠ 73	1F	*	L01-2447-05	POWER TRANSFORMER ASSY	UEB	
74A	2D		N08-0128-35	GND TERMINAL		
74B	1A,1B	*	N09-0400-05	TAPTITE SCREW		
75	3E,3F		N29-0033-05	PUSH RIVET		
76	2F,3B		N29-0035-05	PUSH RIVET		
78	2F	*	R01-4027-05	VARIABLE RESISTOR (PRESET)		
79	3F	*	R06-5073-15	VARIABLE RESISTOR (MIC MIX)		
80	3G	*	R11-9013-05	VARIABLE RESISTOR (VOLUME)		
⚠ 81	1F		S31-2001-05	SLIDE SWITCH (4 OHM-8 OHM)	MUH[UE]	
⚠ 81	1F		S31-2001-05	SLIDE SWITCH (4 OHM-8 OHM)	MUE	
⚠ 81	1F		S31-2001-05	SLIDE SWITCH (4 OHM-8 OHM)	UEB	
⚠ 81	1F		S31-2068-05	SLIDE SWITCH (4 OHM-8 OHM)	KK	
⚠ 82	1C		S31-2046-05	SLIDE SWITCH (VOLTAGE SEL)		
83	3G		T42-0006-05	DC MOTOR		
84	1D		T90-0104-15	LOOP ANTENNA		
-			T90-0132-05	T TYPE ANTENNA	KMU	
-			T90-0132-05	T TYPE ANTENNA	EUEB	
-			T90-0202-05	T TYPE ANTENNA	KMUH	
-			T90-0202-05	T TYPE ANTENNA	[UE]	
-			W09-0016-05	BATTERY		
POWER SUPPLY (X00-2160-10)						
C1 ,2			CC45FSL1H101J	CERAMIC 100PF J		
C3 ,4			CC45FSL1H470J	CERAMIC 47PF J		
C5 ,6			CQ93FM1H152J	MYLAR 1500PF J		
C7 ,8			CE04FW1A470M	ELECTRO 47UF 10WV		
C9 ,10			CE04FW1E101M	ELECTRO 100UF 25WV		

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C11 ,12			CE04FW1A221M	ELECTRO 220UF 10WV		
C13 ,14			CC45SL1H010C	CERAMIC 1PF C		
C15 ,16			CC45SL1H560J	CERAMIC 56PF J		
C17 ,18			CC45SL1H680J	CERAMIC 68PF J		
C19 ,20			CE04W2A010M	ELECTRO 1UF 100WV		
C21 ,22			CC45FSL1H100D	CERAMIC 10PF D		
C23 ,24			CC45SL1H121J	CERAMIC 120PF J		
C25 ,26			CC45SL1H120J	CERAMIC 12PF J		
C27 ,28			CE04GW1H010M	LL-ELEC 1. 0UF 50WV		
C29 ,30			CC45SL1H090D	CERAMIC 9PF D		
C31 ,32			CQ93M2A473M	MYLAR 0. 047UF M		
C33 ,34			CQ93M2A103M	MYLAR 0. 010UF M		
C35			CE04W1C221M	ELECTRO 220UF 16WV		
C37			CE04GW1C470M	LL-ELEC 47UF 16WV		
C41 -44			CK45E2H103P	CERAMIC 0. 01UF P		
C45 ,46			C90-0560-05	ELECTRO 8200UF 71WV		
C47 ,48			CE04W2A470M	ELECTRO 47UF 100WV		
C49			CE04W1C332M	ELECTRO 3300UF 16WV		
C50 ,51			CK45E1H103P	CERAMIC 0. 01UF P		
C52			CE04W1V102M	ELECTRO 1000UF 35WV		
C53			CE04W1V221M	ELECTRO 220UF 35WV		
C54			CE04FW1E220M	ELECTRO 22UF 25WV		
C55			CE04FW1A470M	ELECTRO 47UF 10WV		
C56			CE04FW1H010M	ELECTRO 1UF 50WV		
C57			CE04FW1E470M	ELECTRO 47UF 25WV		
C58			CE04FW1C220M	ELECTRO 22UF 16WV		
C59 -63			CE04FW1C470M	ELECTRO 47UF 16WV		
C64 ,65			CK45E1H103P	CERAMIC 0. 01UF P		
C66			CE04W1V222M	ELECTRO 2200UF 35WV		
C67			CE04W1V471M	ELECTRO 470UF 35WV		
C68			CE04FW1E330M	ELECTRO 33UF 25WV		
C69			CE04FW1H010M	ELECTRO 1UF 50WV		
C70			CE04FW1E470M	ELECTRO 47UF 25WV		
C71			CE04FW1E330M	ELECTRO 33UF 25WV		
C72			CE04FW1H010M	ELECTRO 1UF 50WV		
C73			CE04W1E471M	ELECTRO 470UF 25WV		
C74			CK45FB1H152K	CERAMIC 1500PF K		
C75 ,76			CK45B1H152K	CERAMIC 0. 0015UF K		
C101			C91-0699-05	CERAMIC CAPACITOR (TYPE 3)		
-			E11-0089-05	PHONE JACK (PHONES)	KMUH	
-			E11-0089-05	PHONE JACK (PHONES)	UE	
-			E11-0103-05	PHONE JACK (PHONES)	KMU	
-			E11-0103-05	PHONE JACK (PHONES)	EUEB	
⚠ F1 ,2			F05-5022-05	FUSE (250V 5A)	MUHUE	
⚠ F1 ,2			F05-5022-05	FUSE (250V 5A)	MUE	
⚠ F1 ,2			F05-5022-05	FUSE (250V 5A)	UEB	
⚠ F1 ,2			F06-5022-05	FUSE (250V 5A)	KK	
⚠ F3			F05-4022-05	FUSE (250V 4A)	MUHUE	
⚠ F3			F05-4022-05	FUSE (250V 4A)	MUE	
⚠ F3			F05-4022-05	FUSE (250V 4A)	UEB	
⚠ F3			F06-4024-05	FUSE (250V 4A)	KK	
-			J13-0041-05	FUSE CLIP		
L1 ,2			L40-1011-03	SMALL FIXED INDUCTOR		

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L3 ,4			L39-0085-05	PHASE-COMPENSATION COIL		
R21 ,22			RS14GB3A392J	FL-PROOF RS 3.9K J 3A		
R23 ,24			RS14GB3A562J	FL-PROOF RS 5.6K J 3A		
R25 -28			RD14GB2E681J	FL-PROOF RD 680 J 2E		
R31 ,32			RD14GB2E820J	FL-PROOF RD 82 J 2E		
R33 ,34			RS14GB3A103J	FL-PROOF RS 10K J 3A		
R39 -42			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R51 ,52			RS14GB3A100J	FL-PROOF RS 10 J 3A		
R53 ,54			RS14GB3F100J	FL-PROOF RS 10 J 3F		
R55 ,56			RS14GB3A100J	FL-PROOF RS 10 J 3A		
R70			RS14GB3F102J	FL-PROOF RS 1K J 3F		
R80 -82			RS14GB3A180J	FL-PROOF RS 18 J 3A		
R86			RS14GB3D121J	FL-PROOF RS 120 J 3D		
R93			RS14GB3A5R6J	FL-PROOF RS 5.6 J 3A		
R100			RD14GB2E4R7J	FL-PROOF RD 4.7 J 2E		
R102			RD14GB2E4R7J	FL-PROOF RD 4.7 J 2E		
R103			RD14GB2E821J	FL-PROOF RD 820 J 2E		
R104			RD14GB2E4R7J	FL-PROOF RD 4.7 J 2E		
R105			RS14GB3A2R2J	FL-PROOF RS 2.2 J 3A		
R107-109			RS14GB3D201J	FL-PROOF RS 200 J 3D		
R113			RD14GB2E2R2J	FL-PROOF RD 2.2 J 2E		
R115			RS14GB3D271J	FL-PROOF RS 270 J 3D		
R119			RS14GB3A221J	FL-PROOF RS 220 J 3A		
R120			R92-0173-05	RC 2.2M M 2H	KK	
R121,122			RS14GB3A561J	FL-PROOF RS 560 J 3A		
VR1 ,2			R12-0502-05	SEMI FIXED VARIABLE RESITSTOR		
⚠ RL1			S51-1034-05	MAGNETIC RELAY		
RL2			S51-4040-05	MAGNETIC RELAY		
D1 ,2			RD5.1E(B2)	ZENER DIODE		
D3 ,4			RD22E(B2)	ZENER DIODE		
D5 -12			1S2076	DIODE		
D13			W06B	DIODE		
D15			W06B	DIODE		
D17 -20			1S1555	DIODE		
D17 -20			1S2076	DIODE		
D21			M4C-51-13*2	DIODE		
D22 -25			GP20DL	DIODE		
D26 -29			W06B	DIODE		
D30			1S2076	DIODE		
D31			RD5.1E(B2)	ZENER DIODE		
D32			RD6.2E(B2)	ZENER DIODE		
D33			RD11E(B2)	ZENER DIODE		
D34			RD15E(B2)	ZENER DIODE		
D35			RB-151LFA	DIODE		
D36			1S2076	DIODE		
Q1 ,2			UPA68H	DUAL FET		
Q3 ,4			2SC945(A)(Q,P)	TRANSISTOR		
Q5 ,6			2SC945(A)(Q,P)	TRANSISTOR		
Q7 ,8			2SC2259(G,H)	DUAL TRANSISTOR		
Q9 ,10			2SA899(B,V)	TRANSISTOR		
Q11 ,12			2SA733(A)(Q,P)	TRANSISTOR		
Q11 ,12			2SA999(E,F)	TRANSISTOR		
Q13 ,14			2SA899(B,V)	TRANSISTOR		

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Q15 ,16			2SC1904(B,V)	TRANSISTOR		
Q17			2SC945(A)(Q,P)	TRANSISTOR		
Q18			2SA1127NC(R,S)	TRANSISTOR		
Q18			2SA733(A)(Q,P)	TRANSISTOR		
Q18			2SA999(E,F)	TRANSISTOR		
Q19			2SC1841	TRANSISTOR		
Q19			2SC2378(Q,P)	TRANSISTOR		
Q20			2SA954(L,K)	TRANSISTOR		
Q21 ,22			2SC945(A)(Q,P)	TRANSISTOR		
Q23			2SC2003(L,K)	TRANSISTOR		
Q24			2SC945(A)(Q,P)	TRANSISTOR		
Q25			2SC2003(L,K)	TRANSISTOR		
Q26			2SC945(A)(Q,P)	TRANSISTOR		
Q27			2SC2003(L,K)	TRANSISTOR		
Q28			2SA1127NC(R,S)	TRANSISTOR		
Q28			2SA733(A)(Q,P)	TRANSISTOR		
Q28			2SA999(E,F)	TRANSISTOR		
Q29			2SC2003(L,K)	TRANSISTOR		
Q31			2SD330	TRANSISTOR		
Q32 ,33			2SC945(A)(Q,P)	TRANSISTOR		
Q34 -36			2SA954(L,K)	TRANSISTOR		
Q37			2SD330	TRANSISTOR		
Q38 ,39			2SC945(A)(Q,P)	TRANSISTOR		
Q40			2SD330	TRANSISTOR		
Q41 ,42			2SA1127NC(R,S)	TRANSISTOR		
Q41 ,42			2SA733(A)(Q,P)	TRANSISTOR		
Q41 ,42			2SA999(E,F)	TRANSISTOR		
TUNER (X05-2000-10)						
C1			C91-0085-05	CERAMIC 0.022UF N		
C2			CE04FW1C470M	ELECTRO 47UF 16WV		
C3			CK45FB1H471K	CERAMIC 470PF K		
C4 ,5			CK45FF1H103Z	CERAMIC 0.01UF Z		
C6 ,7			C91-0085-05	CERAMIC 0.022UF N		
C8			CK45FB1H471K	CERAMIC 470PF K		
C9 ,10			CK45FF1H473Z	CERAMIC 0.047UF Z		
C11			CK45F1H473Z	CERAMIC 0.047UF Z		
C12			CK45FB1H331K	CERAMIC 330PF K		
C13			CE04FW1HR47M	ELECTRO 0.47UF 50WV		
C14 -16			C91-0085-05	CERAMIC 0.022UF N		
C17			CE04FW1H010M	ELECTRO 1UF 50WV		
C18			C91-0085-05	CERAMIC 0.022UF N		
C19			CE04FW1C101M	ELECTRO 100UF 16WV		
C20			C91-0085-05	CERAMIC 0.022UF N		
C21			CE04FW1C100M	ELECTRO 10UF 16WV		
C22			CE04W1C471M	ELECTRO 470UF 16WV		
C23			CQ93FM1H473K	MYLAR 0.047UF K		
C24			CK45FB1H152K	CERAMIC 1500PF K		
C25			CQ09FS1H102J	POLYSTY 1000PF J		
C26			CQ93FM1H222K	MYLAR 2200PF K		
C27			CE04W1H3R3M	ELECTRO 3.3UF 50WV		
C28			CE04FW1HR47M	ELECTRO 0.47UF 50WV		
C29 ,30			CE04FW1H010M	ELECTRO 1UF 50WV		
C31			CE04FW1H3R3M	ELECTRO 3.3UF 50WV		
C32			CQ93FM1H103K	MYLAR 0.01UF K		

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C37 ,38			CE04FW1C100M	ELECTRO	10UF	16WV		
C39 -42			CE04FW1HR47M	ELECTRO	0. 47UF	50WV		
C43			CC45SL1H271J	CERAMIC	270PF	J		
C45			CE04FW1E470M	ELECTRO	47UF	25WV		
C46			CE04W1E470M	ELECTRO	47UF	25WV		
C47 -50			CQ93M1H272J	MYLAR	0. 0027UF	J		
C51 ,52			CQ93FM1H562J	MYLAR	5600PF	J		
C53 ,54			CE04FW1C100M	ELECTRO	10UF	16WV		
C55 ,56			CE04FW1H010M	ELECTRO	1UF	50WV		
C60			CK45FF1H103Z	CERAMIC	0. 01UF	Z		
C61			CQ09FS1H391J	POLYSTY	390PF	J		
C62			CK45FF1H473Z	CERAMIC	0. 047UF	Z		
C63			C91-0083-05	CERAMIC	0. 01UF	N		
C64			CK14D1H102M	CERAMIC	1000PF	M		
C65			CK45FF1H473Z	CERAMIC	0. 047UF	Z		
C66			CQ93FM1H223K	MYLAR	0. 022UF	K		
C67			CE04FW1C100M	ELECTRO	10UF	16WV		
C68			C91-0083-05	CERAMIC	0. 01UF	N		
C69			CQ93M1H223K	MYLAR	0. 022UF	K		
C70			CQ93FM1H102K	MYLAR	1000PF	K		
C71			CQ93M1H103K	MYLAR	0. 01UF	K		
C72			CE04FW1H010M	ELECTRO	1UF	50WV		
C73			CE04FW1H3R3M	ELECTRO	3. 3UF	50WV		
C74			CK45F1H103Z	CERAMIC	0. 01UF	Z		
C75			CQ93M1H104K	MYLAR	0. 1UF	K		
C76			C91-0083-05	CERAMIC	0. 01UF	N		
C80			CE04FW1C101M	ELECTRO	100UF	16WV		
C81			CE04FW1H2R2M	ELECTRO	2. 2UF	50WV		
C83			CE04FW1H010M	ELECTRO	1UF	50WV		
C85			CK45F1H473Z	CERAMIC	0. 047UF	Z		
C86			CE04FW1C100M	ELECTRO	10UF	16WV		
C87			CK45F1H473Z	CERAMIC	0. 047UF	Z		
C88			CK45FF1H103Z	CERAMIC	0. 01UF	Z		
C89			CK45B1H102K	CERAMIC	0. 001UF	K		
C100-102			CE04FW1HR47M	ELECTRO	0. 47UF	50WV		
C104			CE04FW1H4R7M	ELECTRO	4. 7UF	50WV		
C105			CE04FW1V100M	ELECTRO	10UF	35WV		
C106			CE04FW1H010M	ELECTRO	1UF	50WV		
C107			CE04FW1A101M	ELECTRO	100UF	10WV		
C108			CK45FB1H102K	CERAMIC	0. 001UF	K		
C109			CE04W1C221M	ELECTRO	220UF	16WV		
C110			CE04FW1E470M	ELECTRO	47UF	25WV		
C111			CE04FW1V330M	ELECTRO	33UF	35WV		
C112			C91-0085-05	CERAMIC	0. 022UF	N		
C201			CK45F1H103Z	CERAMIC	0. 01UF	Z		
C202,203			CE04W1V100M	ELECTRO	10UF	35WV		
C204			CK45B1H471K	CERAMIC	470PF	K		
C205			CC45SL1H121J	CERAMIC	120PF	J		
C206			CE04W1C470M	ELECTRO	47UF	16WV		
C207			CE04W1C101M	ELECTRO	100UF	16WV		
C208			CK45F1H103Z	CERAMIC	0. 01UF	Z		
C209			CC45CH1H101J	CERAMIC	100PF	J		
C210			CC45CH1H270J	CERAMIC	27PF	J		
C211			CK45F1H103Z	CERAMIC	0. 01UF	Z		
C212			CE04W1C330M	ELECTRO	33UF	16WV		

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C213			C91-0083-05	CERAMIC 0.01UF N		
C214-219			CE04W1H010M	ELECTRO 1UF 50WV		
C220			CK45F1H103Z	CERAMIC 0.01UF Z		
C221			CE04W1E220M	ELECTRO 22UF 25WV		
C222,223			CE04W1H010M	ELECTRO 1UF 50WV		
C225			CE04AW1C101M	LL-ELEC 100UF 16WV		
C226			CE04W1V330M	ELECTRO 33UF 35WV		
C227			CK45F1H473Z	CERAMIC 0.047UF Z		
C228,229			CK45F1H103Z	CERAMIC 0.01UF Z		
C230			CC45SL1H220J	CERAMIC 22PF J		
C231			CE04W0J221M	ELECTRO 220UF 6.3WV		
C232			CK45F1H103Z	CERAMIC 0.01UF Z		
C233,234			CC45CH1H330J	CERAMIC 33PF J		
C235			CE04W1H010M	ELECTRO 1UF 50WV		
C236			CE04W1A101M	ELECTRO 100UF 10WV		
C237			CK45F1H473Z	CERAMIC 0.047UF Z		
C238			CE04BW1H010M	NP-ELEC 1UF 50WV		
C239			CQ93M1H333K	MYLAR 0.033UF K		
C241			CE04W1V221M	ELECTRO 220UF 35WV		
C242			CK45F1H103Z	CERAMIC 0.01UF Z		
C243			CE04BW1H010M	NP-ELEC 1UF 50WV		
C244,245			CK45B1H102K	CERAMIC 0.001UF K		
C246			CE04W1V330M	ELECTRO 33UF 35WV		
C247			CE04W1H010M	ELECTRO 1UF 50WV		
C250			CE04W1E470M	ELECTRO 47UF 25WV		
C251			CK45F1H473Z	CERAMIC 0.047UF Z		
C252			CE04W1E101M	ELECTRO 100UF 25WV		
C253,254			CK45F1H473Z	CERAMIC 0.047UF Z		
C255			CE04W1A101M	ELECTRO 100UF 10WV		
C256-258			CK45F1H473Z	CERAMIC 0.047UF Z		
C259			CE04W1E470M	ELECTRO 47UF 25WV		
C260			CE04W1C330M	ELECTRO 33UF 16WV		
C262			CK45F1H473Z	CERAMIC 0.047UF Z		
C267			CE04W1C101M	ELECTRO 100UF 16WV		
C268			CK45B1H102K	CERAMIC 0.001UF K		
C270			CC45SL1H150J	CERAMIC 15PF J		
TC1 ,2			C05-0303-05	CERAMIC TRIMMER CAPACITOR		
202	2D		E20-0439-05	TERMINAL BOARD(ANTENNA)		
			L19-0026-05	BALUN TRANSFORMER		
CF1			L72-0125-05	CERAMIC FILTER		
CF2 ,3			L72-0115-05	CERAMIC FILTER		
CF4 ,5			L72-0135-05	CERAMIC FILTER		
CF6			L72-0097-05	CERAMIC FILTER		
CF7			L72-0096-05	CERAMIC FILTER		
L1			L30-0327-15	FM IFT		
L2			L30-0328-05	FM IFT		
L3 ,4			L79-0060-05	LC FILTER		
L5			L31-0455-05	MW-RF COIL		
L6			L32-0258-05	MW OSCILLATING COIL		
L7			L30-0337-05	AM IFT		
L10			L40-1021-03	SMALL FIXED INDUCTOR		
L12 -19			L40-1021-12	SMALL FIXED INDUCTOR		
X1			L77-0573-05	CRYSTAL RESONATOR		

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X2			L77-0584-05	CRYSTAL RESONATOR		
X3			L78-0202-05	RESONATOR		
CP1 ,2			R90-0154-05	MULTI-COMP 820K X4		
CP3			R90-0155-05	MULTI-COMP 13K X4		
CP4			R90-0156-05	MULTI-COMP		
CP5 ,6			R90-0157-05	MULTI-COMP 47K X5		
CP7 ,8			R90-0158-05	MULTI-COMP 47K X7		
CP9			R90-0132-05	MULTI-COMP 100K X7		
CP10			R90-0160-05	MULTI-COMP 820K X8		
CP11			R90-0161-05	MULTI-COMP 100K X8		
CP12			R90-0162-05	MULTI-COMP 47K X8		
CP13			R90-0163-05	MULTI-COMP 47K X9		
CP14			R90-0164-05	MULTI-COMP		
CP15-22			R90-0168-05	MULTI-COMP		
CP23			R90-0165-05	MULTI-COMP		
CP24			R90-0167-05	MULTI-COMP		
CP25-28			R90-0166-05	MULTI-COMP		
CP30			R90-0188-05	MULTI-COMP 0.01UF X4		
R6			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R14			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R28			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R30			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R47 ,48			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R73			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R86			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R146			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R147			RD14GB2E100J	FL-PROOF RD 10 J 2E		
R215			RD14GB2E100J	FL-PROOF RD 10 J 2E		
R219			RC05GF2H685M	RC 6.8M M 2H		
R277,278			RD14GB2E561J	FL-PROOF RD 560 J 2E		
R287			RD14GB2E221J	FL-PROOF RD 220 J 2E		
R291			RD14GB2E100J	FL-PROOF RD 10 J 2E		
VR3			R12-1041-05	SEMI FIXED VARIABLE RESITSTOR		
VR4			R12-5030-05	SEMI FIXED VARIABLE RESITSTOR		
VR5			R12-3051-05	SEMI FIXED VARIABLE RESITSTOR		
VR6			R12-3046-05	SEMI FIXED VARIABLE RESITSTOR		
VR7			R12-1040-05	SEMI FIXED VARIABLE RESITSTOR		
S1			S31-4012-05	SLIDE SWITCH		
D1 -6			1S2076	DIODE		
D8 -21			1S2076	DIODE		
D22			1S1555	DIODE		
D22			1S2076	DIODE		
D23 -25			1S2076	DIODE		
D26			KV1236(Z1)	VARIABLE CAPACITANCE DIODE		
D27 ,28			1S2076	DIODE		
D29			RD6.2E(B2)	ZENER DIODE		
D30			1S1555	DIODE		
D30			1S2076	DIODE		
D31 -48			1S2076	DIODE		
D49			RD8.2E(B2)	ZENER DIODE		
D50 -63			1S2076	DIODE		
D64 ,65			1N60	DIODE		
D67 -71			1S2076	DIODE		

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D80 -84			1S2076	DIODE		
D85 -87			1S1555	DIODE		
D85 -87			1S2076	DIODE		
D88 ,89			1S2076	DIODE		
D98			1N60	DIODE		
D99			1S1555	DIODE		
D99			1S2076	DIODE		
FL1			FIP13AM10	FLUORESCENT INDICATOR TUBE		
IC1			HA11225	IC		
IC2			HA11223W	IC		
IC3			AN6552	IC		
IC3			UPC4557C	IC		
IC4			MB84069BM	IC		
IC4			TC4069UBP	IC		
IC4			UPD4069UBC	IC		
IC5			LA1245	IC		
IC6			MB74LS42M	IC		
IC7			UPD553C-127	IC		
IC8			MB84020BM	IC		
IC8			TC4020BP	IC		
IC8			UPD4020C	IC		
IC9			MC14042UBCP	IC		
IC9			UPD4042C	IC		
IC10			MB84069BM	IC		
IC10			TC4069UBP	IC		
IC10			UPD4069UBC	IC		
IC11			UPD1703C-016	IC		
IC12			UPB553AC	IC		
IC13			M51903L	IC		
IC14			AN6552	IC		
IC14			UPC4557C	IC		
Q1			2SC1923	TRANSISTOR		
Q2			2SA733(A)(Q,P)	TRANSISTOR		
Q3 -5			2SK105(H,J)	FET		
Q7 -14			2SC945(A)(Q,P)	TRANSISTOR		
Q15 ,16			2SA733(A)(Q,P)	TRANSISTOR		
Q17			2SC945(A)(Q,P)	TRANSISTOR		
Q18 ,19			2SC1735	TRANSISTOR		
Q21 -27			2SA733(A)(Q,P)	TRANSISTOR		
Q28			2SK105(H,J)	FET		
Q29			2SA733(A)(Q,P)	TRANSISTOR		
Q30			2SD863	TRANSISTOR		
Q31			2SC945(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA733(A)(Q,P)	TRANSISTOR		
Q34 -39			2SD863	TRANSISTOR		
Q40 -45			2SA733(A)(Q,P)	TRANSISTOR		
Q46 ,47			2SC945(A)(Q,P)	TRANSISTOR		
Q48			2SA733(A)(Q,P)	TRANSISTOR		
Q49			2SA733(A)(Q,P)	TRANSISTOR		
Q50 ,51			2SC945(A)(Q,P)	TRANSISTOR		
Q52 -67			2SA733(A)(Q,P)	TRANSISTOR		
Q71 -75			2SA733(A)(Q,P)	TRANSISTOR		
Q81 -87			2SC945(A)(Q,P)	TRANSISTOR		
Q88 ,89			2SA733(A)(Q,P)	TRANSISTOR		
Q90			2SC945(A)(Q,P)	TRANSISTOR		

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Q91 -96			2SA733(A)(Q,P)	TRANSISTOR		
Q97			2SK105(H,J)	FET		
Q98			2SC945(A)(Q,P)	TRANSISTOR		
-			W02-0070-05	FM FRONT-END ASSY		
MAIN AMP (X07-1900-10)						
C1 ,2			CE04FW1A470M	ELECTRO 47UF 10WV		
C3 -6			CQ93FM1H153K	MYLAR 0.015UF K		
C7 -10			CE04FW1V100M	ELECTRO 10UF 35WV		
R1 ,2			RD14GB2E680J	FL-PROOF RD 68 J 2E		
R3 ,4			RD14GB2E270J	FL-PROOF RD 27 J 2E		
R5 ,6			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R7 -10			RD14GB2E390J	FL-PROOF RD 39 J 2E		
R15 -18			RD14GB2E470J	FL-PROOF RD 47 J 2E		
R19 -26			RD14GB2E4R7J	FL-PROOF RD 4.7 J 2E		
R27 -34			R92-0166-05	METAL-PLATE 0.22 K 3D		
R35 -38			R92-0167-05	METAL-PLATE 0.22 K 3H		
VR1 ,2			R12-0077-05	SEMI FIXED VARIABLE RESITSTOR		
D1 ,2			1S1555	DIODE		
D1 ,2			1S2076	DIODE		
D3 -14			1S2076A	DIODE		
D15 ,16			STV-3H(G)	VARISTOR		
Q1 ,2			2SC2591*1(Q,R)	TRANSISTOR		
Q3 ,4			2SA1111*1(Q,R)	TRANSISTOR		
Q5 -8			2SA1186(O,Y)	TRANSISTOR		
Q9 -12			2SC2837(O,Y)	TRANSISTOR		
Q13 ,14			2SC2320(E,F)	TRANSISTOR		
Q13 ,14			2SC828A(Q,R)	TRANSISTOR		
Q13 ,14			2SC945(A)(Q,P)	TRANSISTOR		
Q15 -18			2SA733(A)(Q,P)	TRANSISTOR		
Q15 -18			2SA999(E,F)	TRANSISTOR		
Q19 ,20			2SC2320(E,F)	TRANSISTOR		
Q19 ,20			2SC828A(Q,R)	TRANSISTOR		
Q19 ,20			2SC945(A)(Q,P)	TRANSISTOR		
PRE AMP (X08-1870-10)						
C1 ,2			CC45FSL1H221J	CERAMIC 220PF J		
C3 ,4			CE04FW1A221M	ELECTRO 220UF 10WV		
C5 ,6			CC45SL1H560J	CERAMIC 56PF J		
C7 ,8			CQ93M1H113J	MYLAR 0.011UF J		
C9 ,10			CQ93M1H393J	MYLAR 0.039UF J		
C11 ,12			CE04FW1A101M	ELECTRO 100UF 10WV		
C13 ,14			CE04FW1C330M	ELECTRO 33UF 16WV		
C15 ,16			CE04AW1E4R7M	LL-ELEC 4.7UF 25WV		
C17 ,18			CE04FW1H010M	ELECTRO 1UF 50WV		
C19 ,20			CE04FW1A220M	ELECTRO 22UF 10WV		
C21 ,22			CE04FW1C100M	ELECTRO 10UF 16WV		
C23			CE04FW1E101M	ELECTRO 100UF 25WV		
C24			CE04W1C471M	ELECTRO 470UF 16WV		
C25			CE04FW1A101M	ELECTRO 100UF 10WV		
C26 ,27			CK45FB1H102K	CERAMIC 0.001UF K		
C28			CE04FW1V100M	ELECTRO 10UF 35WV		
C29 ,30			CK45B1H821K	CERAMIC 820PF K		
C31 ,32			CE04AW1H010M	LL-ELEC 1UF 50WV		
C33			CE04FW1A221M	ELECTRO 220UF 10WV		

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R25 -28			RD14GB2E330J	FL-PROOF RD 33 J 2E		
R53			RS14GB3A682J	FL-PROOF RS 6.8K J 3A		
R55			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R56			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R61			RD14GB2E100J	FL-PROOF RD 10 J 2E	KK	
D1 -15			1S1555	DIODE		
D1 -15			1S2076	DIODE		
D16			RD8.2E(B2)	ZENER DIODE		
D17			RD16E(B3)	ZENER DIODE		
Q1 -4			2SK163(L,M)	FET		
Q5 ,6			2SA733(A)(Q,P)	TRANSISTOR		
Q5 ,6			2SA999(E,F)	TRANSISTOR		
Q7 ,8			2SA992(F,E)	TRANSISTOR		
Q9 ,10			2SC2320(E,F)	TRANSISTOR		
Q9 ,10			2SC828A(Q,R)	TRANSISTOR		
Q9 ,10			2SC945(A)(Q,P)	TRANSISTOR		
Q11 ,12			2SA733(A)(Q,P)	TRANSISTOR		
Q11 ,12			2SA999(E,F)	TRANSISTOR		
Q13 ,14			2SD655	TRANSISTOR		
Q15 -17			2SC2320(E,F)	TRANSISTOR		
Q15 -17			2SC828A(Q,R)	TRANSISTOR		
Q15 -17			2SC945(A)(Q,P)	TRANSISTOR		
Q18			2SA733(A)(Q,P)	TRANSISTOR		
Q18			2SA999(E,F)	TRANSISTOR		
Q19			2SC2003(L,K)	TRANSISTOR		
Q20			2SC2320(E,F)	TRANSISTOR		
Q20			2SC828A(Q,R)	TRANSISTOR		
Q20			2SC945(A)(Q,P)	TRANSISTOR		
Q21			2SA954(L,K)	TRANSISTOR		
TONE AMP (X11-1670-10)						
C1 ,2			CE04GW1H2R2M	LL-ELEC 2.2UF 50WV		
C3 ,4			CE04GW1E4R7M	LL-ELEC 4.7UF 25WV		
C5 ,6			CC45FSL1H220J	CERAMIC 22PF J		
C7 ,8			CE04GW1E4R7M	LL-ELEC 4.7UF 25WV		
C9 ,10			CQ93FM1H152J	MYLAR 1500PF J		
C11 ,12			CE04GW1H010M	LL-ELEC 1.0UF 50WV		
C13 ,14			CQ93FM1H183J	MYLAR 0.018UF J		
C15 ,16			CE04GW1HR33M	LL-ELEC 0.33UF 50WV		
C17 ,18			CQ93FM1H822J	MYLAR 8200PF J		
C19 ,20			CQ93M1H154J	MYLAR 0.15UF J		
C21 ,22			CQ93FM1H332J	MYLAR 0.0033UF J		
C23 ,24			CQ93FM1H473J	MYLAR 0.047UF J		
C25 ,26			CQ93FM1H152J	MYLAR 1500PF J		
C27 ,28			CQ93FM1H223J	MYLAR 0.022UF J		
C29 ,30			CC45FSL1H471J	CERAMIC 470PF J		
C31 ,32			CQ93FM1H822J	MYLAR 8200PF J		
C33 ,34			CC45FSL1H221J	CERAMIC 220PF J		
C35 ,36			CQ93FM1H332J	MYLAR 0.0033UF J		
C37 ,38			CC45FSL1H101J	CERAMIC 100PF J		
C39			CE04GW1H010M	LL-ELEC 1.0UF 50WV		
C40			CK45FB1H331K	CERAMIC 330PF K		
C41			CE04FW1H010M	ELECTRO 1UF 50WV		
C42			CC45FSL1H101J	CERAMIC 100PF J		
C45			CE04GW1H2R2M	LL-ELEC 2.2UF 50WV		
C46 ,47			CE04FW1E100M	ELECTRO 10UF 25WV		

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C48 ,49			CE04FW1E101M	ELECTRO 100UF 25WV		
C51 ,52			CE04BW1E2R2M	NP-ELEC 2.2UF 25WV		
C53 -55			CE04FW1H2R2M	ELECTRO 2.2UF 50WV		
C56			CE04W1E220M	ELECTRO 22UF 25WV		
C57 ,58			CE04W1H2R2M	ELECTRO 2.2UF 50WV		
C59 -62			CE04FW1H010M	ELECTRO 1UF 50WV		
C63 ,64			CE04FW1C100M	ELECTRO 10UF 16WV		
C65 ,66			CE04FW1E101M	ELECTRO 100UF 25WV		
C67			CE04W1V101M	ELECTRO 100UF 35WV		
R81 ,82			RD14GB2E471J	FL-PROOF RD 470 J 2E		
R83 ,84			RD14GB2E560J	FL-PROOF RD 56 J 2E		
R131			RS14GB3A180J	FL-PROOF RS 18 J 3A		
R133			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R134			RD14GB2E470J	FL-PROOF RD 47 J 2E		
VR1 -7			R29-3004-05	VARIABLE RESISTOR (PUSH TYPE)		
VR11,12			R12-3302-05	SEMI FIXED VARIABLE RESITSTOR		
VR13,14			R12-2302-05	SEMI FIXED VARIABLE RESITSTOR		
D1 ,2			RD8.2E(B2)	ZENER DIODE		
D3 -7			1S1555	DIODE		
D3 -7			1S2076	DIODE		
D11 -16			1S1555	DIODE		
D11 -16			1S2076	DIODE		
D17 -20			1N60	DIODE		
D21 -23			1S1555	DIODE		
D21 -23			1S2076	DIODE		
FL1			FIP24A15YS	FLUORESCENT INDICATOR TUBE		
IC1 ,2			AN6551	IC		
IC3			MB84066BM	IC		
IC4 ,5			BA658	IC		
Q1 -16			2SC1845(F,E)	TRANSISTOR		
Q1 -16			2SC1980(S,T)	TRANSISTOR		
Q17			2SC2320(E,F)	TRANSISTOR		
Q17			2SC828A(Q,R)	TRANSISTOR		
Q17			2SC945(A)(Q,P)	TRANSISTOR		
Q18			2SA733(A)(Q,P)	TRANSISTOR		
Q18			2SA999(E,F)	TRANSISTOR		
Q21 -24			2SC2320(E,F)	TRANSISTOR		
Q21 -24			2SC828A(Q,R)	TRANSISTOR		
Q21 -24			2SC945(A)(Q,P)	TRANSISTOR		
Q25			2SA733(A)(Q,P)	TRANSISTOR		
Q25			2SA999(E,F)	TRANSISTOR		
Q26 ,27			2SK105(H,J)	FET		
Q28			2SA733(A)(Q,P)	TRANSISTOR		
Q28			2SA999(E,F)	TRANSISTOR		
Q29			2SC2003(L,K)	TRANSISTOR		
Q30			2SC2320(E,F)	TRANSISTOR		
Q30			2SC828A(Q,R)	TRANSISTOR		
Q30			2SC945(A)(Q,P)	TRANSISTOR		
SPEAKER (X13-3150-10)						
C1 ,2			CK45F1H103Z	CERAMIC 0.01UF Z		
401	1C		E20-0812-05	TERMINAL BOARD(SPEAKERS)		
RL1			S51-2049-05	MAGNETIC RELAY		

E: Scandinavia & Europe **H**:Audio Club **K**: USA **P**: Canada
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⚠ indicates safety critical components.

K, M, U, E, UEB; KR-1000B

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
RL2 ,3			S51-2048-05	MAGNETIC RELAY		
RL4			S51-2049-05	MAGNETIC RELAY		
D1 -3			W06B	DIODE		

SWITCH (X13-3160-10)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
PL1 -21			B30-0298-05	LAMP		
C1 ,2			CQ93FM1H332K	MYLAR 0.0033UF K		
C3 ,4			CE04GW1HR22M	LL-ELEC 0.22UF 50WV		
C5 ,6			CQ93FM1H273K	MYLAR 0.027UF K		
C7 -10			CE04FW1H010M	ELECTRO 1UF 50WV		
C15			CE04AW1C100M	LL-ELEC 10UF 16WV		
C16 ,17			CE04FW1C100M	ELECTRO 10UF 16WV		
C20 -23			CK45F1H473Z	CERAMIC 0.047UF Z		
-			E06-0513-05	REC/PLAY JACK		
-			E13-0618-05	PHONO JACK		
R79 ,80			RS14GB3A470J	FL-PROOF RS 47 J 3A		
R100,101			RC05GF2H471K	RC 470 K 2H		
VR1			R06-5074-15	VARIABLE RESISTOR(BALANCE)		
RL1			S51-2050-05	REED RELAY		
D1 ,2			1N60	DIODE		
D3 ,4			1S2076	DIODE		
D5 ,6			1N60	DIODE		
D7 -17			1S2076	DIODE		
D18			1N60	DIODE		
D19			1S2076	DIODE		
D20			1N60	DIODE		
D21 -43			1S2076	DIODE		
D44			RD8.2E(B2)	ZENER DIODE		
D45			RD9.1E(B2)	ZENER DIODE		
D46 -56			1S2076	DIODE		
D57			RD6.2E(B3)	ZENER DIODE		
D58 -61			1S2076	DIODE		
D62			RD8.2E(B2)	ZENER DIODE		
D63 -70			1S2076	DIODE		
D71 -77			1S1555	DIODE		
D71 -77			1S2076	DIODE		
IC1			HD14052BP	IC		
IC2			MB84066BM	IC		
IC3			MB84052BM	IC		
IC3			TC4052UBP	IC		
IC3			UPD4052BC	IC		
IC4			TC4555UBP	IC		
IC4			UPD4555BC	IC		
IC5 -9			MB84066BM	IC		
IC10			MB84069BM	IC		
IC10			TC4069UBP	IC		
IC10			UPD4069UBC	IC		
IC11-13			MB84066BM	IC		
IC14			AN6552	IC		
IC14			UPC4557C	IC		
Q1 -33			2SC2320(E,F)	TRANSISTOR		
Q1 -33			2SC828A(Q,R)	TRANSISTOR		

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Q1 -33			2SC945(A)(Q,P)	TRANSISTOR		
Q34 -38			2SA733(A)(Q,P)	TRANSISTOR		
Q34 -38			2SA999(E,F)	TRANSISTOR		
Q39			2SC2320(E,F)	TRANSISTOR		
Q39			2SC828A(Q,R)	TRANSISTOR		
Q39			2SC945(A)(Q,P)	TRANSISTOR		
Q40 ,41			2SA733(A)(Q,P)	TRANSISTOR		
Q40 ,41			2SA999(E,F)	TRANSISTOR		
Q42 ,43			2SK105(H,J)	FET		
Q44 -65			2SD592NC	TRANSISTOR		
Q44 -65			2SD863	TRANSISTOR		
Q66			2SD330	TRANSISTOR		
Q67			2SD313V-AL	TRANSISTOR		
Q68			2SB514	TRANSISTOR		
Q69			2SB764	TRANSISTOR		

PUSH BUTTON (X13-3230-10)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
PL1 -6			B30-0300-05	LAMP		
S1 -57			S40-1033-05	PUSH SWITCH		
S58 -62			S40-2111-05	PUSH SWITCH		
D1			1S1555	DIODE		
D1			1S2076	DIODE		
D2 -4			1S2076	DIODE		
D2 -4			1S1555	DIODE		
D10			1S1555	DIODE		
D10			1S2076	DIODE		

BUZZER (X13-4300-10)

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C1			CE04FW1H010M	ELECTRO 1UF 50WV	KMUUE	
C1			CE04FW1H010M	ELECTRO 1UF 50WV	E	
C2			CQ93FM1H103J	MYLAR 0.010UF J	KMUUE	
C2			CQ93FM1H103J	MYLAR 0.010UF J	E	
C3		*	CQ93FM1H223J	MYLAR 0.022UF J	KMUUE	
C3		*	CQ93FM1H223J	MYLAR 0.022UF J	E	
C4			CE04HW1H010M	NP-ELEC 1.0UF 50WV	KMUUE	
C4			CE04HW1H010M	NP-ELEC 1.0UF 50WV	E	
C5 ,6			CK45FF1H103Z	CERAMIC 0.01UF Z	KMUUE	
C5 ,6			CK45FF1H103Z	CERAMIC 0.01UF Z	E	
C7			CE04FW1E220M	ELECTRO 22UF 25WV	KMUUE	
C7			CE04FW1E220M	ELECTRO 22UF 25WV	E	
C8			CK45FF1H103Z	CERAMIC 0.01UF Z	KMUUE	
C8			CK45FF1H103Z	CERAMIC 0.01UF Z	E	
C9			CE04FW1H010M	ELECTRO 1UF 50WV	KMUUE	
C9			CE04FW1H010M	ELECTRO 1UF 50WV	E	
L1		*	L40-1011-46	SMALL FIXED INDUCTOR	KMUUE	
L1		*	L40-1011-46	SMALL FIXED INDUCTOR	E	
BZ1		*	T95-0016-05	PIEZOELECTRIC VIBRATOR	KMUUE	
BZ1		*	T95-0016-05	PIEZOELECTRIC VIBRATOR	E	
D1 -12			1S1555	DIODE	KMUUE	
D1 -12			1S1555	DIODE	E	
D1 -12			1S2076	DIODE	KMUUE	
D1 -12			1S2076	DIODE	E	
IC1			TC4011BP	IC	KMUUE	

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
IC1			TC4011BP	IC	E	
IC1			UPD4011BC	IC	KMUUE	
IC1			UPD4011BC	IC	E	
Q1			2SA733(A)(Q,P)	TRANSISTOR	KMUUE	
Q1			2SA733(A)(Q,P)	TRANSISTOR	E	
Q1			2SA999(E,F)	TRANSISTOR	KMUUE	
Q1			2SA999(E,F)	TRANSISTOR	E	
Q2 -7			2SC2320(E,F)	TRANSISTOR	KMUUE	
Q2 -7			2SC2320(E,F)	TRANSISTOR	E	
Q2 -7			2SC945(A)(Q,P)	TRANSISTOR	KMUUE	
Q2 -7			2SC945(A)(Q,P)	TRANSISTOR	E	

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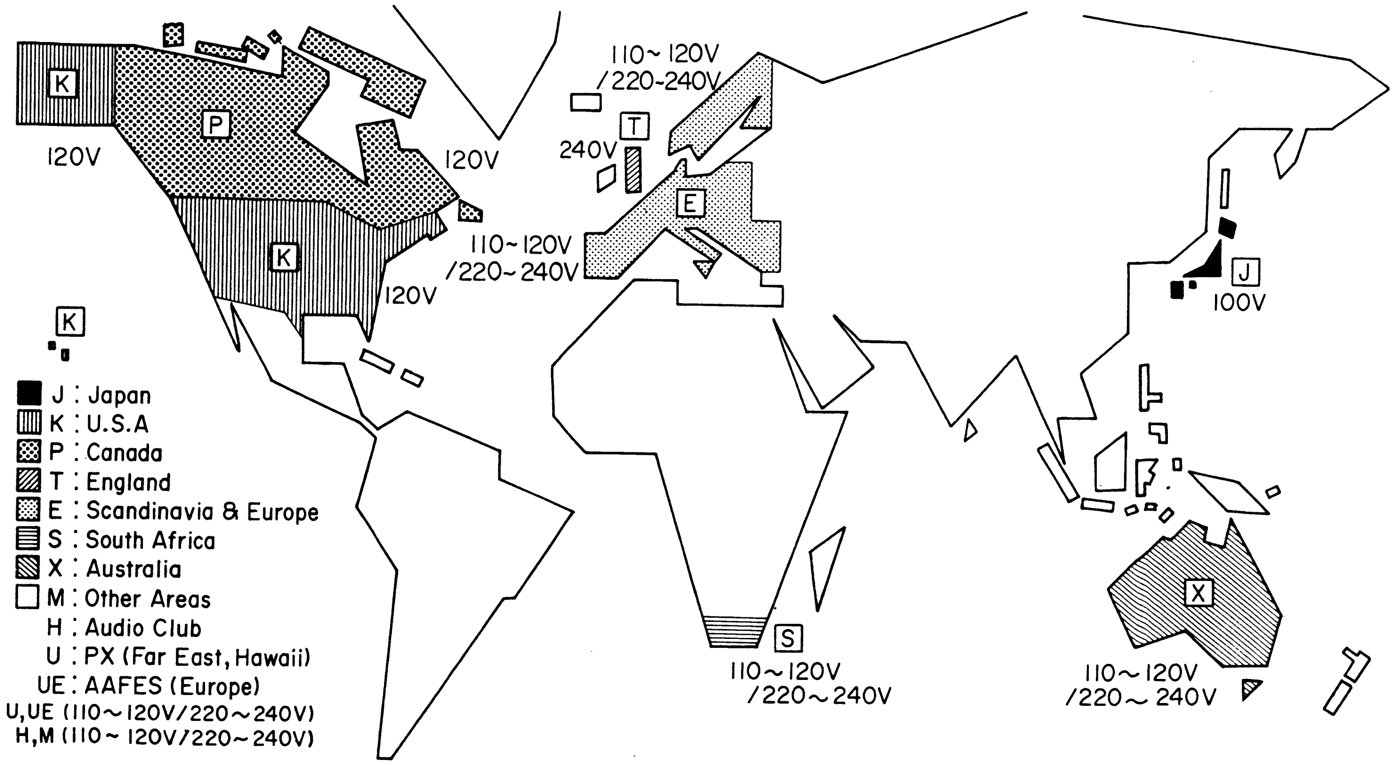
WORLD MAP & AREA CODE


K
P
120V
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E
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J
100V
K
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X
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/220~ 240V
■ J : Japan
▥ K : U.S.A
▩ P : Canada
▨ T : England
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▧ X : Australia
☐ M : Other Areas
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U : PX (Far East, Hawaii)
UE : AAFES (Europe)
U,UE (110~120V/220~240V)
H,M (110~ 120V/220~240V)

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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